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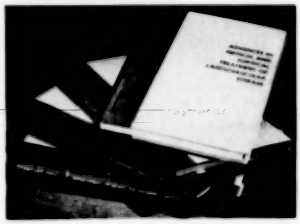

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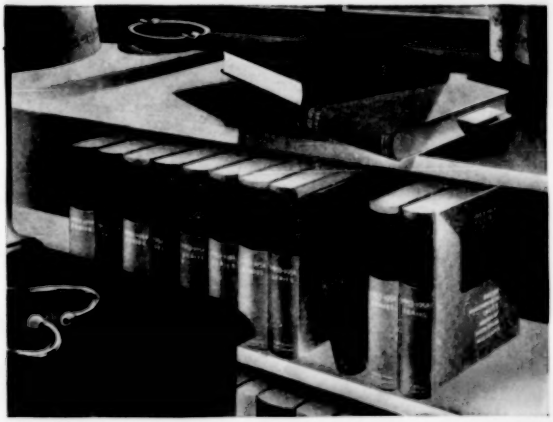

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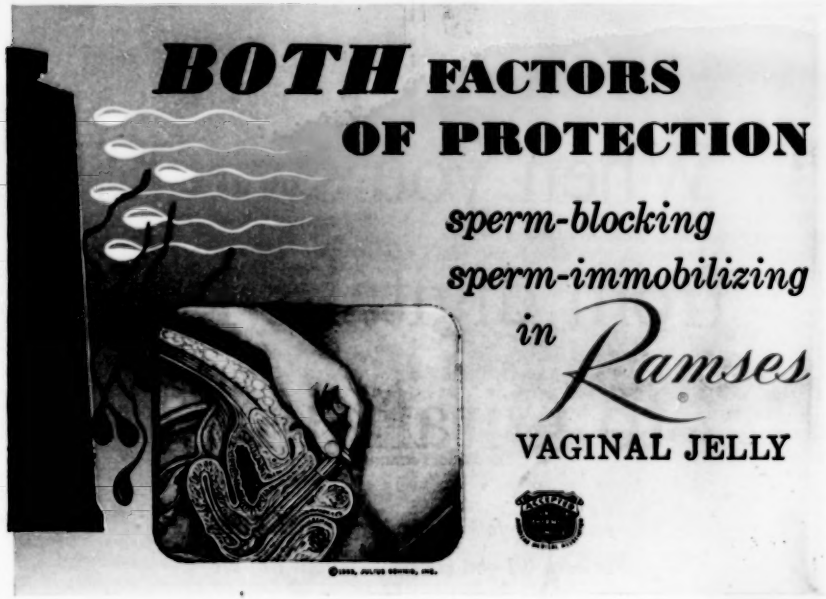

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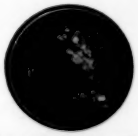

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1. Batterman, R. C.; DeGraff, A. C.; Gutner, L. B.; Rose, O. A., and Lhowe, J.: Studies with Gitalin (amorphous) for the Treatment of Patients with Congestive Heart Failure, Am. Heart J. *42*:292 (Aug.) 1951.

2. Batterman, R. C.; DeGraff, A. C., and Rose, O. A.: The Therapeutic Range of Gitalin (amorphous) Compared with Other Digitalis Preparations, Circulation *5*:201 (Feb.) 1952.

3. Steigmann, F., and Weiss, A.: Gitalin in the Treatment of Congestive Heart Failure: A Clinical Study, to be published.

WASHINGTON NEWS

THE PRESIDENT'S HEALTH PROGRAM

The American Medical Association is supporting in principle much of President Eisenhower's health program but is reserving judgment on the reinsurance feature "until the plan is spelled out in detail." Decision to endorse most of the Eisenhower proposals was made at a meeting of the Board of Trustees. The trustees adopted a statement saying in part: "The Board is pleased to find in this [the President's] message so many of the ideas and principles for which the American Medical Association has striven for so many years. The Board indorses the general objectives of the President to extend needed facilities, to promote further research, to increase coverage under voluntary health insurance, and to rehabilitate the disabled."

When the Board met, the only official information on the President's reinsurance proposal was his message on health, in which Mr. Eisenhower recommended an appropriation of 25 million dollars to start a federal corporation to underwrite health plans. He said the objective was to extend coverage and broaden benefits but was not specific. In view of this, the Board came to this decision: "There are certain basic principles which the American Medical Association feels are essential in the consideration of any voluntary health insurance program. There must be free choice of physicians and hospitals; the program must be founded on sound and actuarial data and there must be no direct or indirect control of the program by the government.

"The administration's federal reinsurance proposal is indefinite. It is not clear whether this is true reinsurance or another form of government subsidy. This whole subject needs careful study and until the plan is spelled out in detail the American Medical Association can make no further comment. The American Medical Association feels that there may be other approaches to the problem of extending health coverage than that of federal reinsurance."

HEW DEPARTMENT BUDGET

The administration has asked Congress for an appropriation of $2,321,591,988 for all operations of the Department of Health, Education, and Welfare (HEW) during the fiscal year starting next July 1. The total is about 2 million dollars under the budget for the current fiscal year, owing chiefly to a reduction in public assistance grants to states. These grants alone account for 1 billion dollars of the HEW budget.

The President, in his message submitting the budget to Congress, reiterated his opposition to the socialization of medicine. He stated: "This administration flatly opposes the socialization of medicine. Under the traditional American approach, private and non-profit medical and hospital insurance programs have grown steadily and now cover a large segment of the population. Yet there is still a long way to go. Many families are not protected; many health costs are not insured. Positive action to promote the health of all our people has been recommended in my recent [health] message."

The proposed budget items of medical interest under the HEW total include: Public Health Service, $191,463,000; Food and Drug Administration, $6,245,000; Office of Vocational Rehabilitation, $27,625,000; and Children's Bureau, $30,000,000. The Budget Bureau breakdown of the PHS total is given in the following tabulation.

Recipient	Proposed	Current
General assistance to states	$15,029,000	$13,525,000
Venereal disease control	2,300,000	5,000,000
Tuberculosis control	3,500,000	6,000,000
Communicable disease control	4,397,000	5,000,000
Hill-Burton program	55,000,000	65,000,000
Hospitals and medical care	33,040,000	33,117,500
National Cancer Institute	19,730,000	20,104,775
Mental health activities	12,460,000	12,689,575
National Heart Institute	14,570,000	15,169,750
Arthritis and metabolic diseases	7,270,000	6,985,150
Microbiology	5,930,000	5,721,300
Neurology and blindness	4,763,000	4,501,750

Budget requests for other agencies' medical programs include: Atomic Energy Commission, $27,000,000; Civil Defense Administration, $60,000,000; National Science Foundation, $14,000,000; and Bureau of Indian Affairs, $54,105,320.

A. M. A. POSITION ON HEALTH PROBLEMS

At a hearing of the House Committee on Interstate and Foreign Commerce, A. M. A. President-Elect Walter B. Martin explained the Association's position on many of the broad problems connected with medical care. He stated: "We feel that in an effort to create public sentiment in support of a government-controlled medical care program a distorted picture of the health and medical situation in this country has been drawn. At times the magnitude of such problems has been exaggerated while actual progress toward solving them has been minimized. To lose perspective is to lose judgment."

"To clarify certain misconceptions," Dr. Martin outlined for the committee statistics to show that the cost of medical care has not increased as rapidly as the general cost of living and that "less than 3% of all the people [as shown in a Federal Reserve Board survey] need help to pay their medical bills." He also described the phenomenal progress of medical research, which is extending the average life span and reducing the length of the

From the Washington Office of the American Medical Association.

average illness. Dr. Martin denied that a "serious shortage" of physicians exists but proposed on behalf of the Association that medical schools be assisted financially by (*a*) an intensification of nongovernmental efforts to raise funds for the schools and (*b*) a federal program of one-time construction grants for medical and nursing schools. He also suggested use of federal funds to support a nurse recruitment campaign and to provide nurse school scholarships.

In discussing the financing of medical care, Dr. Martin told the committee that the American Medical Association believes that the medical care of indigents is a local and state responsibility. Some of the apparently medically indigent, he said, can be educated to give health protection priority in their spending. He added: "We are carrying on through personal field visits studies of successful local indigent medical care plans with the purpose of extending adequate care to all persons who are indigent and to the borderline group which we call the medically indigent. From the findings we expect to obtain useful data that will aid in the solution of this very difficult problem."

The A. M. A. spokesman said that a number of private and nonprofit insurance groups already are writing insurance to cover the cost of extended or catastrophic insurance. He said that a million persons already are protected by such policies and that this problem "is now receiving ever increasing study and experimentation by several agencies in both the private and non-profit fields." In conclusion, Dr. Martin stated: "Our most urgent effort should now be directed to the solution of the problem of the medically indigent and the chronically ill. We believe that this objective can be reached without major change in our existing mechanism."

TAX LAWS AND MEDICAL EXPENSES

The House Ways and Means Committee has agreed on major changes in the income tax law involving medical expenses, changes strongly endorsed by the American Medical Association. The committee approved these revisions in the 1954 general revenue bill:

1. Lowering from 5% to 3% of adjusted gross income the total a taxpayer may deduct from his income for medical, dental, and hospital expenses in any one year.

2. Permitting deductions for medicaments and drugs if they exceed $50 or 1% of adjusted gross income, whichever is greater.

3. Doubling of maximum limitations for deduction of medical expenses: $2,500 multiplied by the number of exemptions (other than for age or blindness), except that for a single taxpayer expenses are not to exceed $5,000, and for the head of a family, or married couple filing a joint return, $10,000.

4. Allowing medical expenses of a deceased person, provided they are paid within a year after death and further if the expenses are not taken as an estate tax deduction.

5. Permitting as deduction travel expenses when prescribed by a physician, provided they are limited to actual transportation costs. Living expenses for meals or lodging while away from home are not deductible items.

The committee is working section-by-section on an omnibus measure, which is expected to be reported to the House around March 1. As the committee agrees on various points in the bill, it makes known its decision.

MEDICAL CARE AND VETERANS ADMINISTRATION

The Eisenhower budget proposes a reduction of about 3% in Veterans Administration medical spending for the next fiscal year, beginning next July 1. While current expenses would go up one million dollars (693 to 694 million dollars), hospital construction costs would be reduced from an estimated 84 million this year to 60 million dollars. In discussing the VA in his budget message to Congress, President Eisenhower noted that it was "our firm obligation" to help veterans with service-incurred disabilities and to assist all veterans in their readjustment to civilian life. Then he added: "Finally, we must remember that the best way to help our millions of veterans is by making it possible for them to share fully in the economic and social gains of our country. This means assuring them adequate job opportunities. It also means assuring them, both during and after military service, of the same protection under the broad social-security program that is provided for nonveterans. Progress in achieving these objectives will lessen the need for pensions and other special benefits for the vast majority of veterans who, fortunately, did not incur disabilities during their service."

MISCELLANY

The United States death rate for 1953 remained at the relatively low 9.6 per 1,000, despite an influenza outbreak early in the year; the finding is based on a preliminary estimate by the U. S. Public Health Service. . . . The National Science Foundation announces 100 grants totaling slightly more than one million dollars for research in the biological and physical sciences and to support conferences and education. . . . Fifty medical colleges and large civilian hospitals have entered an informal agreement with the Army to supply a specific number of highly qualified physicians and dentists to staff a number of 1,000-bed hospitals in case of a major national emergency. The hospitals and schools would be permitted to retain the selected men until after the reserve hospital units had been called and the "emergency" hospitals' administrative and housekeeping personnel had been organized and trained. . . . Roswell B. Perkins, 27, New York attorney, has been nominated as Assistant Secretary of Health, Education, and Welfare. A Republican, Mr. Perkins is a former assistant counsel for the Kefauver crime investigating committee. For the last four months he has been a special consultant to Secretary Hobby's department, assigned to social security. . . . Confirmed by the Senate as brigadier generals in the medical reserve were Perrin H. Long, Alexander Marble, Harold G. Scheie, and Frank E. Wilson. Dr. Wilson is director of the A. M. A.'s Washington Office.

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no excitation or wakefulness Because the vasoconstrictor of 'Benzedrex' Inhaler is a derivative of cyclohexane—not a derivative of benzene as is ephedrine—it produces almost no central nervous stimulation. It may be freely used even by those individuals in whom such ephedrine-like effects as insomnia, restlessness, or nervousness are frequently encountered.

Each 'Benzedrex' Inhaler is packed with propylhexedrine, S.K.F., 250 mg.; and aromatics.

Smith, Kline & French Laboratories, Philadelphia

Benzedrex Inhaler*

relieves nasal congestion in seconds

*T. M. Reg. U. S. Pat. Off.

To maintain caloric balance... to provide a safe reducing diet

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THE PROBLEM of non-pathologic obesity presents no scientific obstacles to its solution. The plain fact is that overweight results from ingestion of more calories than are needed for daily bodily metabolism. In this connection it is well to bear in mind that a calorie of carbohydrate or protein provides the same energy value as a calorie of fat.

But there is a difference in the degree to which these various calories contribute to satiety. A 2,500-calorie diet normal in fat content is more satisfying than a diet of equal calories consisting of fruits and vegetables. Thus, true caloric balance calls for more than mere measurement of calories—adequate proportions of fat must be included in the diet.

And by the same token, when reducing is indicated, considerations of satiety likewise require an adequate amount of fat in the low-calorie diet. Whichever the situation, Crisco can play an important role. This pure, all-vegetable shortening is ideal for cooking, and it serves to make food more appetizing, more satisfying, more valuable in fulfilling dietary requirements.

CRISCO

All-Hydrogenated
All-Vegetable Shortening
It's Digestible!

154
954

Pfizer

Spectrum

Positive physical findings (negative findings excluded)

Positive laboratory findings

CYSTIC MASS
1 cm. in diameter

PULMONARY FINDINGS
Few scattered diffuse rhonchi and coarse rales

CARDIAC FINDINGS
Pericardial friction rub
Left border slightly enlarged

CHEST ROENTGENOGRAM

SWEATING PROFUSELY

BLOOD WORK
Complete blood count — normal
Fasting blood sugar — 98
(normal 70–110)
Erythrocyte sedimentation rate
(Westergren) — 40 mm. in 1 hr.
(normal below 20)

LIVER EDGE DOWN 4 fingerbreadths below right costal margin — firm, regular, nontender

URINE
Negative on admission
Occasional erythrocytes noted subsequently

LIVER FUNCTION TESTS
Albumin/globulin = 3.7/3.5
(normal 4.0–5.2/1.3–2.7)
Icterus index = 7 units
(normal 4–7)
Thymol turbidity = 3 units
(normal 4 or less)
Serum bilirubin = 0.8
(normal 0.1–0.8)
Total cholesterol/cholesterol esters = 152/122
(normal 120–260/80–180)
Alkaline phosphatase 5.7
(normal 1–4 Bodansky units)

ELECTRO-CARDIOGR

TENDERNESS AND SWELLING OF CALVES

POSITIVE HOMAN'S SIGN BILATERALLY

THE CLINICAL FINDINGS IN A CLINICAL PATHOLOGIC CONFERENCE—see page 24

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the season for respiratory tract infections—a time for Terramycin®

BRAND OF OXYTETRACYCLINE

The value of Terramycin in promptly controlling the pneumonias, otitis media, severe sinusitis, laryngotracheobronchitis, and virtually all infections of the respiratory tract due to, or complicated by, the many organisms sensitive to Terramycin is now a matter of clinical record. The excellent toleration and the rapid response noted with the use of Terramycin particularly recommend it as a therapy of choice for respiratory tract infections. Among the convenient dosage forms of Terramycin are Capsules, Tablets (sugar coated), good-tasting, nonalcoholic Oral Suspension and Pediatric Drops and Intravenous for hospital use in severe or fulminating infections.

Pfizer

ENURESIS

FEW TENDENCIES in medical thinking are so misleading as worship of the "average"; for example, the "average age" when children stop wetting the bed. One forgets it is in the nature of "averages" that there are about as many children on this side of the average as on that. It is vain to expect every child to exert bladder control at the age of 27.3 months, or 23 months, give or take 5 minutes; it may not even be safe to call it "enuresis" when a child reaches the age of 5. In a sample of 1,000 men drafted for military service, F. C. Thorne (Brandon, Vt.) found that 16 per cent had continued to wet the bed after the age of 5; 2.5 per cent were enuretic up to and beyond the draft age. J. J. Michaels (Boston Psychopathic Hospital) and Miss S. E. Goodman (State Psychopathic Hospital, Ann Arbor, Mich.) found as many as 25 per cent reported after 7 years of age. Now, it goes without saying that a disease affecting 16 per cent of a population (let alone 25 per cent) is one of epidemic proportions.

Hence the outstanding fact to be regarded about enuresis is that it is a common disorder; children in real life wet the bed much longer than children in textbooks or in averages. Moreover, they commonly wet in the daytime as well, and in circumstances making for urinary urgency (like cold weather or nervous excitement) they have even greater urgency; by day or night they show a "sensitive" bladder, an uncertainty of urinary control. There is some diversity of opinion regarding the sex incidence of this disorder. Thus Meredith F. Campbell (Miami, Florida) states: "There is no striking difference . . . in sex incidence, although some statistical studies have shown the condition to be slightly more common in girls. In my experience this has been true." However, Sherman Little, (Children's Hospital, Buffalo) writes: "About twice as many boys as girls present this symptom."

By definition, when involuntary micturition persists as a frequent or regular occurrence unrelated to organic disease past the age of about 3½, the child is said to be suffering from enuresis. Loss of control from neurologic or other organic causes is better regarded as *incontinence* and is by comparison a rare disease. At the far end of neurologic control is the cerebrum which, in children with enuresis, has nothing wrong with it; in fact, dull-witted children are not more prone to enuresis than other children, and it is only outright mental defectives that find bladder control too much to learn.

Gross Organic Origins

For many years the cause of enuresis was sought in the urinary tract, and many urologists even today are confident it is usually to be found there. It is possible to discover urethrotrigonitis, prostatitis or verumontanitis in a goodly number of children, though it has not been fully established what role they play in enuresis. Local conditions such as balanitis, phimosis or adherent prepuce or clitoris are now considered to have doubtful etiologic significance.

In bedwetting, definition of etiology and proper terminology are important. It is better to separate all bedwetters with organic basis from those with functional enuresis or "irritable bladder" — though it is true that a "borderline" irritable bladder can be made *more* irritable by local inflammation with corresponding urinary findings and irritation in or around the genitourinary tract. In general 3 to 10 per cent of all bedwetters will have some organic basis — arising from definite anatomic or physiologic anomalies for which a specific cause can be found and for

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PICTURE CREDIT
PAGE 23: Courtesy Picker X-Ray Corp., White Plains, N. Y.

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which specific medical or surgical procedures are indicated. Congenital abnormalities should be suspected particularly when dribbling is a prominent symptom. General disorders such as diabetes mellitus or insipidus, epilepsy, renal disease and pathology in the central nervous system (spina bifida, cord tumor) must be carefully excluded before labeling the child an enuretic.

A more recent concept holds that enuresis is "a hereditary abnormality" in bladder functioning where cerebral control is normal but the call to micturition is so intense that voluntary inhibition is overcome and involuntary emptying occurs. Children with this abnormality gain bladder control with difficulty — but they *can* be trained. They are, of course, more subject to enuresis under emotional stress than are other children.

Emotion and Enuresis

The intractable, never-dry enuretic usually suffers from frequency and urgency by day and may even have some daytime enuresis. During the night he is unable to respond to the stimulation of a full bladder by awakening. More often than not it will be found that the relapsed enuretic reveals a story of similar trouble in the family.

Some of the most instructive cases are those in which bladder control is achieved and then, as after a new child arrives, lost again. About a sixth of cases may give such a history. It is futile to search for anatomic abnormalities in cases of sudden onset that may have resulted from rivalry and rejection. On the contrary, it is plain that an advantage is somehow envisioned by the child, not necessarily consciously, if he reverts to a more juvenile behavior and requires more attention; and in any child, enuresis has a peculiar value in the life situation: faintly disgraceful, bothersome, retrogressive, but purposeful and not lightly to be given up.

The emotional basis of bedwetting has received close study, and fairly wide agreement has been reached. J. Louise Despert at Cornell explains that enuretic children have difficulty in expressing their aggressions and dream much about guilt, self-punishment and hostility. Many psychiatrists stress the roll of aggression and hostility. M. W. Gerard (University of Chicago) in a study of 65 children revealed that bedwetting was one feature of aggressive and stubborn behavior, in boys often serving as an expression of fearful passivity and in girls showing identification with the active, destructive male — in both sexes, revealing fear of harm from the other sex.

Wetting the bed becomes a weapon to use against an insecure, anxious mother, and such a mother can invite the situation by worrying about "training" too soon, though inadequate training procedures of themselves do not lead to enuresis in any considerable proportion of cases. Bedwetting also becomes a weapon to attract the attention of a parent who does not care enough one way or the other, the instance of early rejection and indifference. One great utility of drugs, operations, psychotherapy or any other intervention is to distract parents and child alike and introduce a new, different point of view about the problem. The very conviction that a remedy or "system" is going to work, if the physician feels it strongly, may suffice to overwhelm enuresis as a symptom and oblige the child to find a behavior disturbance that will prove to be more acceptable.

In clinical situations there may be a handful of people to manage, and in some important respects the mother may be less mature than the enuretic child. The first task is to bring the parents to appreciate that a stable, happy home quietly permeated with love and security is the only atmosphere in which a child can grow up well. The child is encouraged to enjoy rightful pride in any success, but a wet bed is no calamity — it is only a fact. Because a dry bed is praiseworthy, the date may be recorded by circling days on the calendar — but without much emphasis one way or the other. When there are whole weeks circled, the child may visit a friend's home overnight, extending his achievement. He may help as best he can with changing the sheets, in this way gaining some responsibility and independence while seeing what's involved in making a fresh start.

Ordinary household arrangements can be made that encourage a child to gain urinary control. An abundance of fluids should be avoided after supper, and supper should not be an unduly large or liquid meal. A young child can be awakened and taken to the bathroom at appropriate intervals — but it is important that he be fully aroused and made to walk unaided, for carrying him bodily to the toilet will merely train him to void in his sleep.

In a few children the emotional disorder may be so profound that it warrants attention out of all proportion to the enuresis that is one of its symptoms. While it may be rare to find an intractable neurosis in an adult explained by cerebral metastases, *it does happen*, and likewise enuresis in a child may prove to be a sign of severe psychiatric — or urologic — trouble.

Escherichia May Supersede Oedipus

It may be as unfortunate to begin with deep psychiatric probing as to begin with cystoscopic examination in a young child. It may prove to be a far wiser course to assume that enuresis in a given child is *ordinary* enuresis and to watch sensitively both the emotional background and the character of the urine.

Hence the ideal management of enuresis is a calm but thorough study that begins with a careful history and physical examination. The degree of parental agitation and emphasis is filed thoughtfully in the

continued on page 28

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Operating Room Radiography

Radiographs in 60 seconds. Each pair of negative and positive sheets comes in a sealed packet that may be daylight-loaded in a special cassette fitting any standard Bucky tray. Placed in a compact processing box, the packet is pulled through a pair of motor-driven wringerlike rollers. This bursts open a pod of jelly between the sheets. The chemicals which are in the pod bring out the latent image on the negative and at the same time fix it on the positive.

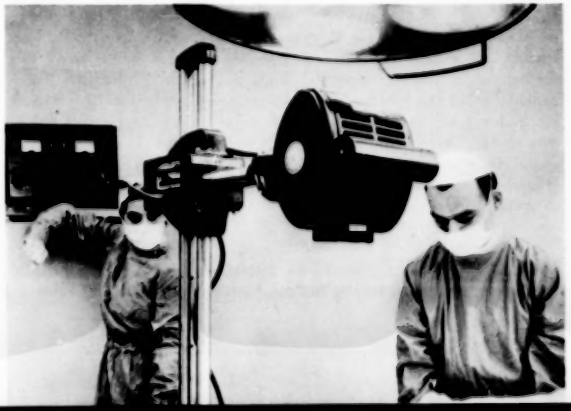
SURGEONS HAVE BEEN reluctant to use radiography in the operating room, even when it might provide valuable guidance and control as in hip-nailings and the removal of calculi. Speed is not always crucial, but still it is frustrating (and sometimes hazardous) to have to wait even the short time it takes for a conventional radiograph to be developed — the patient all this while under anesthesia. Then too, though the chances against a fatal explosion of flammable anesthetics are said to be better than 50,000 to 1, there remains the nagging thought that an eddy of gas might just possibly swirl into the high-voltage equipment, there to be sparked into a blast.

Today these contraindications seem to have lost some of their validity. A process that turns out a useful radiograph in 1 minute flat (without a darkroom) is now in use in over 100 hospitals, and in recent months a safety-engineered mobile roentgenographic unit has reached the market.

The 60-second process (upper right) is an adaptation of the camera Dr. Edwin H. Land of Cambridge, Mass., introduced for the snapshot market several years ago. It turns out a dry paper print rather than a transparency, but the image is sufficiently sharp for certain surgical situations in which radiographic guidance has usually been considered desirable, according to radiologists such as A. S. D'Eloia (Ossining, N. Y., Hospital) and to work done at Massachusetts General Hospital. The new process was given its first field trials by the U.S. Army in the Korean War. The economics of the device are beguiling too, for the initial investment, which comes to about $600, and the higher cost of the film are offset by savings in the cost of using the operating room. The darkroom is not even needed to load and unload cassettes, and the processing mechanism takes up no more space than a bridge table.

The new roentgenographic unit, unveiled last August at the San Francisco meeting of the American Hospital Association, is the first to be rated safe for use in operating rooms by the Underwriters' Laboratories. Its heart is a mechanism that automatically breaks the electric circuit as soon as there is any reduction in the amount of insulating oil in the tubehead. Oil loss signals leakage, and it is leakage that makes it possible for combustible gases to enter and explode. The control panel, separate from the mobile unit, is permanently installed in the wall 5 feet above the floor, where, according to the National Fire Protection Association, it is safely above the level of anesthetic gases.

The 1-minute process has proved especially valuable in closed-fracture procedures such as Smith-Peterson hip-nailings, according to Maurice M. Pomeranz (director of the Department of Radiology, Hospital for Joint Diseases, New York). Another promising application is the determination (with or without radiopaque medium, while the abdomen is still open) of any calculi remaining in the common duct. END



Roentgenogram in the operating room. New mobile unit places control panel (left) 5 feet above the floor, as prescribed by the National Fire Protection Association. The tubehead has been rated safe for use in operating rooms by Underwriters' Laboratories.

Clinical Pathologic Conference

SCENE: Conference room at —— Hospital

Intern: This 51 year old white man was admitted for pain in the anterior chest of 2 weeks' duration and pain in both legs for 10 days. He had been feeling well until about 2 weeks prior to admission, when following a mild cold he noted the development of an intermittent substernal pain that was dull but occasionally stabbing and did not radiate. It was aggravated by standing or sitting. With it he developed a mild nonproductive cough. Ten days prior to admission he noted cramplike pains in both calves, aggravated by walking or standing. Since the pain began his appetite was poor and he believed he had been having some fever. He had lost about 9 pounds.

The history was noncontributory, except for his drinking ½ to 1 pint of whiskey a day for many years and smoking moderately.

Fig. 1

On admission he appeared to be well developed and well nourished. Although he was sweating, he did not appear ill. Blood pressure 130/80, pulse 84, respirations 20, temperature 100 F. [Other findings are noted on page 19.]

Resident: The staff agreed that the patient on admission had thrombophlebitis of both legs. The explanation of the chest symptoms was debated and the possibility of pulmonary infarction seriously considered.

Roentgenologist: The film shows accentuation of the bronchovascular markings (see Fig. 1, arrows a). The hilar shadows are thickened, with peribronchial infiltration extending from both hilar regions toward the bases (arrows 1b). The cardiac silhouette is enlarged and somewhat globular (arrows 1c) and may be consistent with a pericardial effusion. A gastrointestinal series and barium enema were, incidentally, completely normal.

Resident: A pericardial friction rub was also quite easily heard on admission. The electrocardiogram showed slightly low voltage (see Fig. 2a) and low T waves throughout (2b), which conceivably might go with pericardial change. The liver was enlarged, firm, smooth and not tender. Liver function tests showed serum albumin only slightly decreased, globulin slightly elevated, and a mild elevation of alkaline phosphatase. The possibility of cirrhosis was considered, particularly because of the alcoholic history.

Stay in the Hospital

Intern: As you can see (Fig. 5), the patient remained febrile, with pericardial friction rub and continuing pain in the chest and calves, mostly on the right. The thrombophlebitis was treated with elevation and hot soaks, and Dicumarol was given. However, the patient did not respond well and on the eighth hospital day suddenly developed acute auricular fibrillation (Fig. 3) with absent P waves and irregular appearing QRS complexes. This responded to quinidine. By the fifteenth day the hemoglobin fell to 11.2 Gm., with 3.59 million red cells. White count was 13,500, with 10 per cent eosinophils.

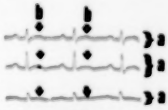


Fig. 2

On the twentieth day the patient had a recurrence of right chest pain, cough and hemoptysis, and at this time rales were heard at the right base. A film showed some congestion at both bases. On the thirty-first day there was another bout of right anterior chest pain, now aggravated by cough. A film showed marked thickening of the hilar shadows, with nodular peribronchial infiltration radiating into both lung fields (see Fig. 4, arrows a). There was also a pathologic fracture of the sixth left rib in the posterior axillary line (Fig. 4, circle b). The heart shadow was larger (4c).

Three days later the patient developed bilateral swelling of the scrotum. In about one week he complained of increased pain in the left leg, as well as some generalized abdominal and right chest pain, though nothing was found except swelling of the leg. The next day he had another small hemoptysis. Then his condition deteriorated rapidly, with increased edema of the leg and scrotum, rales in the left chest and signs of left pleural effusion. He became dyspneic and was digitalized without benefit. On the forty-sixth day he developed sudden, severe pain in the left leg; examination showed cyanosis and an absence of peripheral pulse below the femoral artery. He died during the night.

Some Reflections and Some Possibilities

Internist: This is an interesting and complex situation. We have a middle-aged male with a long alcoholic history who developed thrombophlebitis and what appear to have been multiple pulmonary emboli, possibly from thrombi dislodged from the legs. He also had moderate hepatomegaly and pericardial friction rub. He ran a downhill, febrile course with an episode of fibrillation, extensive edema of one leg and scrotum, pleural effusion, congestive failure, occlusion of the left popliteal artery and death. Significant laboratory data include an elevated sedimentation rate;

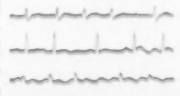


Fig. 3

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mild anemia; mild leukocytosis with 10 per cent eosinophilia; slightly depressed serum albumin and moderately elevated globulin levels, indicating possible parenchymal hepatic involvement; and an elevation of alkaline phosphatase, though much less than is seen in obstructive hepatic disorders.

Let's take up the *heart* first. The combination of pericardial friction rub, chest pain, acute fibrillation and peripheral embolization certainly suggests myocardial infarction. The cardiograms do not support this, but an absence of specific changes is not rare in subendocardial infarction. Some of the newer work of Myron Prinzmetal in Los Angeles emphasizes this. I will admit that this diagnosis would not account for the rest of the illness.

Fig. 4

The roentgenogram shows a rib fracture through an area of bone destruction (Fig. 4). Since this area was not seen in the chest film on admission, it is presumably new — a metastatic lesion. A cystic mass in the scalp may also be metastatic. I think we will agree that we are probably dealing with malignant disease. (By the way, the occurrence of *thrombophlebitis* with malignant disease is fairly common.) With the changing roentgenographic chest findings, cough and chest pain, I do believe the pathologist will show us diffuse pulmonary carcinomatosis, but metastatic rather than primary cancer. The films suggest this. The cough was of relatively short duration, though a bony metastasis does speak for possible primary disease. We know that secondary tumors of bone come from the lung, prostate, kidney, thyroid and breast, and there is little evidence for the latter four here. We must also consider the possibility of a lymphoma or a Boeck's sarcoid with diffuse pulmonary and mediastinal involvement.

Lest we forget, another intriguing possibility, though remote, is primary malignancy of the pericardium — an endothelioma. This might explain the cardiac findings and the failure to respond to digitalis. Such a tumor could well spread through the lungs also, giving the pulmonary picture we see. The heart is involved with metastatic malignancy more often than is suspected clinically.

The enlarged *liver* could be cirrhotic or contain metastases. The laboratory findings are not helpful in deciding — nor was the edge of the liver. Alkaline phosphatase level is frequently high in malignant disease of the liver, but here the elevation, being only slight, speaks more for a cirrhotic process, as does the history of drinking.

The marked *edema* terminally could be due simply to congestive failure, though a thrombosis of the inferior vena cava must be considered.

Finally, as to *other diagnoses:* it is possible for periarteritis nodosa to give as bizarre a picture as this. Other less likely thoughts must include systemic mycotic infections, sarcoid and primary amyloid disease.

Final Clinical Diagnosis

1. Generalized carcinoma, primary site undetermined
   ? Carcinoma of the lung — probably metastatic
2. Arteriosclerotic heart disease with coronary insufficiency
   ? Recent myocardial infarction

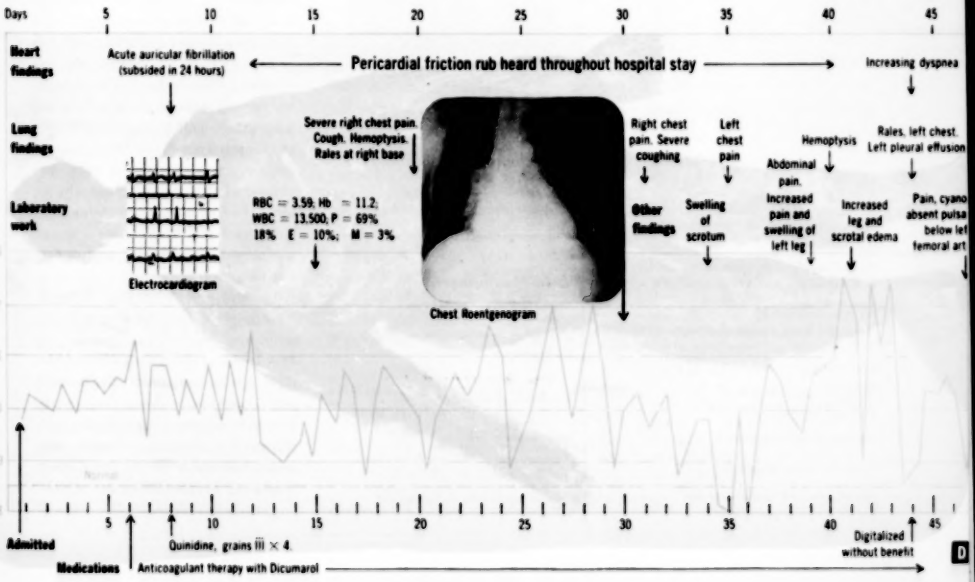

Fig. 5

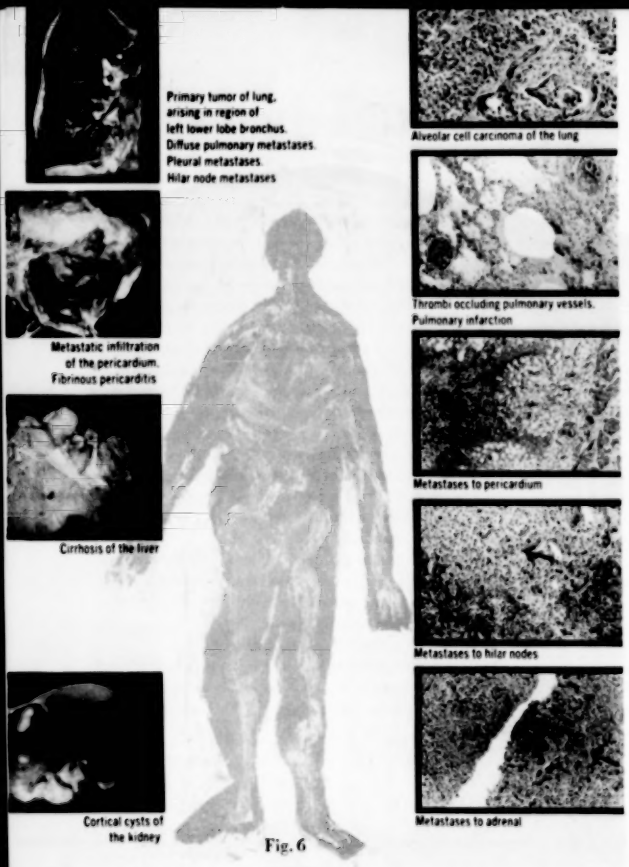
Primary tumor of lung, arising in region of left lower lobe bronchus. Diffuse pulmonary metastases. Pleural metastases. Hilar node metastases
Alveolar cell carcinoma of the lung
Thrombi occluding pulmonary vessels. Pulmonary infarction
Metastatic infiltration of the pericardium. Fibrinous pericarditis
Metastases to pericardium
Cirrhosis of the liver
Metastases to hilar nodes
Cortical cysts of the kidney
Metastases to adrenal

Fig. 6

Clinical and Pathologic Correlations

Signs or Symptoms	*Explanatory Pathology*
Chest pains, cough, hemoptysis, roentgenographic findings	*Carcinoma of the lung Multiple pulmonary infarctions*
Pain and swelling of the legs	*Thrombophlebitis*
Fever, weight loss, anemia, elevated sedimentation rate, elevated W BC and eosinophilia	*Diffuse carcinomatosis*
Enlarged heart, pericardial friction rub, ECG changes, failure to respond to digitalis, acute auricular fibrillation	*Spread of carcinoma to pericardium*
Enlarged liver, depressed albumin, elevated globulin	*Cirrhosis of the liver*
Pathologic rib fractures	*Metastasis to rib*
Scrotal and leg edema	*Thrombosis of left common iliac and lower inferior vena cava*
Acute pain and cyanosis of left leg with absent pulsations	*Tumor embolism to left popliteal artery*

Found at Autopsy (See Fig. 6)

Pathologist: The tumor appeared to arise from the left lower lobe bronchus and it was thought at first to be an ordinary bronchogenic carcinoma. But the sections showed an alveolar cell carcinoma, far less common and usually arising in the periphery of the lung. Generally it is multinodular or it spreads diffusely through the pulmonary parenchyma, as here, often appearing in films as secondary pulmonary carcinomatosis, hematogenous tuberculosis, Boeck's sarcoid, or even pneumoconiosis. The tumor had invaded the pericardium and metastasized to the pleura, mediastinal lymph nodes, diaphragmatic peritoneum, rib and adrenal glands. There were thromboses of pulmonary arteries with infarctions, pulmonary congestion and edema, thrombosis in the left common iliac vein and an embolus of tumor cells in the left popliteal artery. The liver showed Laennec's cirrhosis, but no metastatic tumor. The left kidney had cortical cysts. A cystic mass on the scalp was merely a sebaceous cyst.

Internist: If not for the rib metastases, clinical diagnosis might have been even further from the fact. The clinical picture is adequately explained by the findings. This type of pulmonary cancer rarely obstructs a bronchus, so that segmental atelectasis, emphysema or suppurative disease, often associated with carcinoma of the lung, infrequently occurs. Unfortunately bronchoscopy with cytologic examination was not performed; such studies lead to earlier diagnosis.

In retrospect, a 51 year old man who develops chest pain, cough, hemoptysis, weight loss, anemia and leukocytosis, who has thrombophlebitis, a bony metastatic lesion and fever, and who shows roentgenographic evidence of progressive pulmonary involvement, certainly suggests carcinoma of the lung. Any prolonged cough in an adult should suggest lung cancer. END

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Seen & Heard
—Reports in the news

Blood Defenses

St. Louis — Bacteremia is not as ominous as formerly believed, according to W. Barry Wood, Jr., and associates (Washington University), whose findings indicate that the defense mechanisms of the blood are of a high order. By way of illustration he cites the fact that in mice an injection of 50,000 pneumococci into the blood stream will not prove fatal, whereas an injection of only 5 pneumococci into the peritoneal cavity will lead to death.

With motion pictures taken through a chamber in the rabbit's ear the investigators were able to demonstrate what occurs in the blood during bacteremia. As soon as bacteria invade blood the leukocytes become sticky and attach themselves to the walls of the small blood vessels. This accounts for the leukopenia seen early in bacteremia. Once fastened to the vessel walls, in vessels where the velocity of blood is slowed, the leukocytes trap passing microorganisms and engulf them. This predatory activity of the leukocytes is a first line of defense in bacterial invasion of the blood and serves an important protective function until further mechanisms, such as specific antibody formation, are called into play.

(Reported at a clinical meeting of the American Medical Association, St. Louis.)

Simplified Rheumatic Fever Prophylaxis

New York — Simplest of the various chemotherapeutic regimens for prophylaxis of rheumatic fever is the method reported by Gene H. Stollerman (New York University College of Medicine and Irvington House). Stollerman administered N,N'-dibenzylethylenediamine dipenicillin G once every 4 weeks as a single intramuscular injection in a dose of 1.2 million units to 133 outpatients who had recently recovered from attacks of rheumatic fever. The first year's experience with this method showed the following results:

- There were no recurrences of rheumatic fever in 1,411 patient-months of observation.
- No instances of streptococcal pharyngitis were observed.
- Streptococcal pharyngeal carriers were eliminated.
- Routine monthly throat cultures yielded group A streptococci in only 3 of 1,267 cultures.
- Antistreptolysin O serum titers exhibited a significant rise in only 2 of 1,261 determinations (2 patients with positive throat cultures).

No serious systemic or local toxic reactions were observed among the 133 outpatients or in an additional series of 152 hospitalized patients similarly treated. In only 1 instance was it necessary to discontinue the prophylactic monthly injection. Stollerman concludes that the results compare favorably with those obtained by treatment of a comparable group of rheumatic fever patients with daily oral doses of either 1.0 Gm. of sulfadiazine or 200,000 units of penicillin G.

(Reported at the Antibiotics Symposium, sponsored by Food and Drug Administration and the journal Antibiotics and Chemotherapy, *Washington, D. C.)*

Distinctive Pattern of Cerebral Arteriosclerosis

St. Louis — Arteriosclerosis of cerebral arteries ranks second to that of coronary arteries as a cause of death due to vascular disease. Herman T. Blumenthal and Fred P. Handler (The Jewish Hospital of St. Louis) found the frequency of plaque formation among major intracranial vessels highest in the internal carotid arteries by a wide margin. Next in order of frequency in their series were the basilar and middle cerebral arteries.

Arteriosclerosis of the intracranial arteries differs in pathologic characteristics from that of arteries elsewhere in the body, according to the investigators. Atherosclerotic plaques of the cerebral arteries enlarge and extend into the vessel wall as well as into the lumen, in contrast to other sites, such as the coronary arteries. The growth of the plaque into the vessel leads to atrophy of the muscle of the media, so that the plaque may lie directly against a granulating adventitia. This is the reason for the high frequency of rupture of and hemorrhage from cerebral arteries. Destruction of the internal elastic lamella by the plaque and focal atrophy of the media lead to aneurysm. The investigators attribute the penetration of the vessel wall to the almost complete absence of an external elastic lamella and collagenous adventitia.

continued on page 28

Pfizer ANTIBIOTICS newsletter

"Life-saving" in peritonitis — Terramycin effected recovery in 32 patients critically ill with peritonitis, including "cases so threatening that they no longer were expected to survive operation," H. Schultz reported in *Münchener Medizinische Wochenschrift* 95: 1010 (Sept. 11) 1953. Drug was given intravenously until oral administration was possible. Good results were also obtained with Terramycin in anaerobically infected fractures, *E. coli* abscesses, and certain "therapy-resistant" urinary tract infections and cholangitis.

— Antibiotics Newsletter, Vol. III, No. 21

Intense calcification of an atherosclerotic plaque is seen in this microincinerated section of a cerebral artery. (Organic matter in the section has been removed by incineration, leaving only the mineral deposits.) Marked calcification is common in atherosclerotic cerebral vessels.

In young individuals, another cause of aneurysm is a focal inflammatory reaction which weakens all elements of the vessel wall. No congenital muscle defects were observed. Healed and healing aneurysms of an inflammatory nature have been identified.

(Reported at a clinical meeting of the American Medical Association, St. Louis.)

In SPECTRUM Next Week

Venereal Disease – *Almost a million cases of venereal disease still occur in the United States each year. Hence, there are still considerable diagnostic and therapeutic problems to be considered.*

The Needle's Eye – *A quick look at some recent developments in the technique of needle biopsy.*

Surgical Diseases of the Kidney – *In this graphic presentation, some conditions where operative intervention is necessary are described in detail.*

Some Notes on Mountain Medicine – *Why do men climb mountains and what clinical lessons can be learned from them? This article provides some of the answers as well as a short profile of a famous physician-mountaineer.*

ENURESIS

continued from page 22

examiner's mind, but not communicated to the child – really, it isn't so serious as all that. A few laboratory determinations are helpful, such as making certain the urine is neither diabetic nor infected. A persistently abnormal urinalysis or the finding of other urinary symptoms present also *during the day* calls for a complete urologic investigation, including urography and cystoscopy. Campbell rarely considers any child under the age of 4 as a candidate for a complete genitourinary investigation on the basis of enuresis alone.

Just how the organic component may be underestimated, especially when enuresis proves refractory, was shown some time ago by Campbell in a comprehensive study of 330 children who had been extremely resistant to intensive medical treatment and physio- or psycho-therapy for 2 to 4 months or longer. He found some abnormality of the urinary tract in 2 out of 3; usually urethrotrigonitis in girls and congenital stricture of the urethra in boys, as well as other, less frequent urologic causes, gastrointestinal disorders, rectal fissure and worm infestation. Even if the etiologic significance is not fully established, clearing up known infection or correcting a congenital abnormality can be of physical as well as psychiatric benefit.

Many parents find unthinkable a therapeutic program that contains no medicine, and remedies for enuresis have always been abundant. Atropine is traditional. Even electronics has been used in an alarm-ringing device that wakes the child as soon as the bed is wet. The object is to condition the bedwetter to respond to nocturnal bladder tension by awakening. A list of other materials, maneuvers and devices (some of which were unquestionably proposed in complete seriousness) accumulated over the past 20 years would be impressive, though not necessarily useful.

The important lesson for the grieving parents, not an easy one or readily grasped, is *What a wonderful thing is a child.* The immediate objective is a dry bed, but the certain way of achieving it is a happy child, secure in the love around him. END

"The immediate objective is a dry bed, but the certain way of achieving it is a happy child, secure in the love around him."

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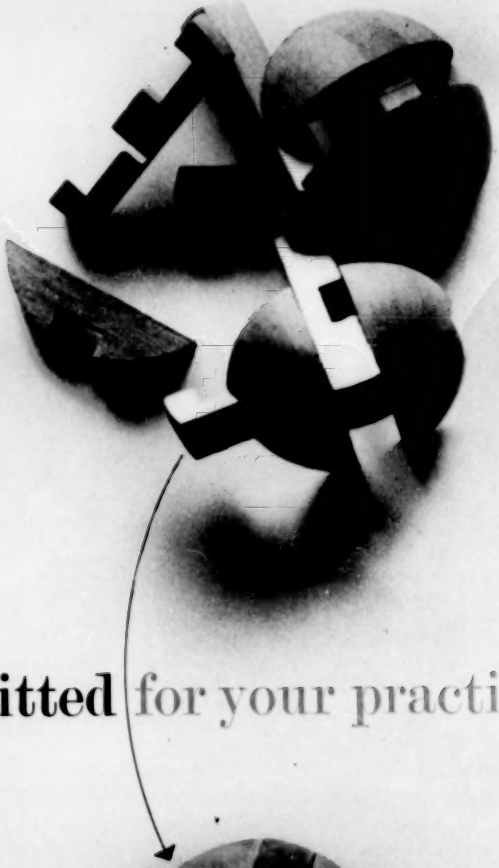
Pfizer Spectrum



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V 15
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* Council on Pharmacy and Chemistry: J.A.M.A. 153: 274 (Sept. 26) 1953.

Accepted by the Council on Pharmacy and Chemistry of the American Medical Association

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SOCIETY	PRESIDENT	SECRETARY	MEETING
AMERICAN MEDICAL ASSOCIATION	Edward J. McCormick, Toledo, Ohio	George F. Lull, 535 N. Dearborn St., Chicago 10	San Francisco, June 21-25 Miami, Fla., Nov. 30-Dec. 3
Aero Medical Association	B. Groesbeck Jr., Bethesda, Md.	T. H. Sutherland, P. O. Box 26, Marion, Ohio	Washington, D. C., March 29-31
American Academy for Cerebral Palsy	Meyer A. Perlstein, Chicago	Harry E. Barnett, 116 S. Michigan Blvd., Chicago 3	Williamsburg, Va., Nov. 5-7
Academy of Allergy	Ben S. Rappaport, Chicago	Alan G. Canert, 1423 West 7th St., Little Rock, Ark.	Chicago, Dec. 4-9
Academy of Dermatology & Syphilology	Fred D. Weidman, Philadelphia	John F. Rauchbuhl, P. O. Box 6565, Cleveland 1	Cleveland, March 25-25
Academy of General Practice	C. R. Bruner, Salt Lake City	Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Mo.	Washington, D. C., April 29-May 1
Academy of Neurology	Howard D. Fabing, Cincinnati	Alexander T. Rose, 1040 West Michigan St., Indianapolis 7	Cincinnati, Dec. 14-16
Academy of Obstetrics & Gynecology	Robert A. Kimbrough Jr., Philadelphia	C. Paul Hodgkinson, 116 S. Michigan Blvd., Chicago 3	Richmond, Va., Feb. 11-13
Academy of Occupational Medicine	Allan J. Fleming, Wilmington, Del.	Leonard J. Goldwater, 600 W. 168th St., New York 32	
Academy of Ophth. & Otolaryn.	Walter H. Theobald, Chicago	W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn.	Chicago, Jan. 23-28
Academy of Orthopaedic Surgeons	Harold B. Boyd, Memphis, Tenn.	John R. Neureuss, 122 S. Michigan Ave., Chicago 3	Chicago, Oct. 4-7
Academy of Pediatrics	Roger L. J. Kennedy, Rochester, Minn.	E. H. Christopherson, 610 Church St., Evanston, Ill.	San Francisco, June 18
Academy of Tuberculosis Physicians	Ethan Allan Brown, Boston	Oscar S. Levin, P. O. Box 7011, Denver 6, Colo.	Baltimore, April 29-30
Assn. for the Study of Neoplastic Diseases	Arthur S. J. Petersen, Chicago	Bruce H. Sisler, P. O. Box 268, Gatlinburg, Tenn.	Atlantic City, N. J., Nov. 11-13
Assn. for the Surgery of Trauma	Exile Asbury, Cincinnati	James K. Stack, 700 N. Michigan Blvd., Chicago 11	Montreal, Can., May 3-5
Assn. for Thoracic Surgery	Emile F. Holman, San Francisco	Paul C. Samson, 2920 McClure St., Oakland 9, Calif.	Galveston, Texas, April 7-9
Assn. of Anatomists	Leslie A. Arey, Chicago	Normand L. Hoerr, 2109 Adelbert Rd., Cleveland 6	Washington, D. C., Sept. 13-16
Assn. of Blood Banks	Aaron Kellner, New York	Miss Marjorie Saunders, 3500 Gaston Ave., Dallas 1	Shawnee-on-Delaware, Pa., May 26-28
Assn. of Genito-Urinary Surgeons	Vincent J. O'Conor, Chicago	Norris J. Heckel, 122 S. Michigan Ave., Chicago 3	Atlantic City, N. J., April 11-15
Assn. of Immunologists	Thomas P. Magill, Brooklyn, N. Y.	John Y. Sugg, 1300 York Ave., New York	
Assn. of Medical Clinics	Wayne Gordon, Billings, Mont.	Arthur H. Grieg, 420 Cherry St., Evansville, Ind.	
Assn. of Neuropathologists	Paul I. Yakovlev, Middletown, Conn.	Armando Ferraro, 150 E. 93d St., New York	
Assn. of Obst. Gyn. & Abd. Surg.	Herbert F. Schmitz, Chicago	F. R. Lock, Bowman Gray School, Winston-Salem, N. C.	Hot Springs, Va., Sept. 9-11
Assn. of Pathologists & Bacteriologists	James B. McNaught, Denver	Alan R. Moritz, 2085 Adelbert Rd., Cleveland 6	Philadelphia, April 9-10
Assn. of Railway Surgeons	J. H. Francis, Memphis, Tenn.	Chester C. Guy, 1900 Sunny Island Ave., Chicago 27	Chicago, April 6-8
Assn. of the History of Medicine	John F. Fulton, New Haven, Conn.	Samuel X. Radbill, 7043 Elmwood Ave., Philadelphia 42	New Haven, Conn., May 6-8
Assn. on Mental Deficiency	Arthur T. Haywood, Cambridge, Ohio	Neil A. Dayton, P. O. Box 96, Williamantic, Conn.	Atlantic City, N. J., May 18-22
Bronchoesophagological Assn.	Edwin N. Broyles, Baltimore	F. Johnson Putney, 255 S. 17th St., Philadelphia	Boston, May 25-26
Clinical & Climatological Assn.	Robert Levy, New York	Marshall N. Fulton, 134 Waterman St., Providence 6, R. I.	Lake Placid, N. Y., Oct. 14-16
College of Allergists	M. Murray Peshkin, New York	Fred W. Whittich, 401 La Salle Med. Bldg., Minneapolis 2	Miami Beach, Fla., April 5-10
College of Chest Physicians	Alvin G. Green, Houston, Texas	Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11	San Francisco, June 17-20
College of Physicians	LeRoy H. Sloan, Chicago	Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4	Chicago, April 5-9
College of Radiology	John D. Camp, Los Angeles	Mr. W. W. Wasmuth, 20 N. Wacker Drive, Chicago 6	
College of Surgeons	Fred W. Rankin, Lexington, Ky.	Michael L. Mason, 40 E. Erie St., Chicago 11	Atlantic City, N. J., Nov. 14-19
Congress of Physical Med. & Rehab.	William B. Snow, New York	Frances Baker, One Tilton Ave., San Mateo, Calif.	Washington, D. C., Sept. 6-11
Dermatological Assn.	Louis J. Brunsting, Rochester, Minn.	J. Lamar Callaway, Duke Hospital, Durham, N.C.	W. Sulphur Spgs., W. Va. April 13-17
Diabetes Assn.	Randall G. Sprague, Rochester, Minn.	John A. Reed, 11 W. 42d St., New York 36	San Fancisco, June 19-20
Electroencephalographic Society	R. B. Aird, San Francisco	John A. Abbott, Mary Gay Hospital, Boston 14	
Federation for Clinical Research	Sterne Wolf, Oklahoma City	Lawrence E. Hinkle Jr., 525 E. 68th St., New York 21	Atlantic City, N. J., May 2
Fracture Assn.	Henry W. Meyerding, Rochester, Minn.	H. W. Wellmerling, 626 Griesheim Bldg., Bloomington, Ill.	Houston, Tex., Oct. 11-14
Gastro-Enterological Assn.	J. M. Ruhs, Durham, N. C.	H. Marvin Pollard, University Hosp., Ann Arbor, Mich.	San Francisco, June 16-19
Geriatrics Society	Willard O. Thompson, Chicago	Malford W. Thewlis, 25 Mechanic St., Wakefield, R. I.	San Francisco, June 17-19
Goiter Assn.	Merrill N. Fouts, Brooklyn, N. Y.	J. C. McClintock, 149½ Washington Ave., Albany 10, N. Y.	Boston, April 29-May 1
Gynecological Society	Richard W. Te Linde, Baltimore	John F. Brewer, 104 S. Michigan Ave., Chicago	Hot Springs, Va., May 30-31
Heart Assn.	Robert L. King, Seattle	William H. Bunn, 44 E. 23d St., New York 10	Chicago, April 1-4
Hospital Assn.	Mr. Ritz E. Hoerner, Los Angeles	Mr. George Bugbee, 18 E. Division St., Chicago 11	Chicago, Sept. 13-16
Laryngological Assn.	Gordon P. Harbaugh, Davenport, Ia.	Harry P. Schenck, 19th St., Philadelphia 3	Chicago, Sept. 27-29
Laryn., Rhin. & Otol. Society	LeRoy A. Schall, Boston	C. S. Nash, 277 Alexander St., Rochester 7, N. Y.	Boston, May 25-27
Medical Women's Assn.	Judith E. Ahlen, Livermore, Calif.	Charna G. Perry, 691 Bridgeway Blvd., Sausalito, Calif.	San Francisco, June 19-20
Medical Writers' Assn.	J. E. Reisch, Springfield, Ill.	Harold Rosenberg, 516 Main St., Quincy, Ill.	Chicago, Sept. 24
Neurological Assn.	Roland P. Mackay, Chicago	H. Houston Merritt, 710 W. 168th St., New York 32	Atlantic City, N. J., June 14-16
Ophthalmological Society	William L. Benedict, Rochester, Minn.	M. C. Whitaker, 30 W. 59th St., New York 19	Glacier Park, Mont., June 14-18
Orthopaedic Assn.	A. R. Shands Jr., Wilmington, Del.	George O. Eaton, 4 E. Madison St., Baltimore 2	Bretton Woods, N. H., June 6-9
Orthopsychiatric Assn.	H. S. Lippman, St. Paul, Minn.	E. E. Welsch, 283 Lexington Ave., New York 16	New York, March 11-13
Otological Society	Frederick T. Hill, Waterville, Me.	John B. Lindsay, 930 E. 59th St., Chicago 37	Boston, May 23-24
Otorhinologic Society for the Advancement of Plastic & Reconstructive Surgery	Samuel F. Kelley, New York	Joseph G. Gilbert, 111 E. 61st St., New York 21	
Pediatric Society	Rustin McIntosh, New York	A. C. McGuinness, 2307 Med. Lab., U. of Pa., Philadelphia	Buck Hill Falls, Pa., May 3-5
Physicians Art Assn.	Challis H. Dawson, Suffolk, Va.	Francis H. Redewill, 760 Market St., San Francisco 2	San Francisco, June 1954
Physiological Society	E. F. Adolph, Rochester, N. Y.	H. E. Essex, Mayo Foundation, Rochester, Minn.	Atlantic City, April 10-16
Proctologic Society	Wendell Gross, Toledo, Ohio	Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y.	Los Angeles, June 3-5
Psychiatric Assn.	Kenneth E. Appel, Philadelphia	R. F. Gayle Jr., 6300 Three Chopt Road, Richmond 21, Va.	St. Louis, May 3-7
Psychosomatic Society	George L. Engel, Rochester, N. Y.	Theodore Lidz, 333 Cedar St., New Haven 11, Conn.	New Orleans, March 27-29
Public Health Association	Hugh R. Leavell, Berkeley, Calif.	R. M. Atwater, 1790 Broadway, New York 19	Buffalo, N. Y., Oct. 11-15

THIS LIST WILL BE CONTINUED IN NEXT WEEK'S JOURNAL

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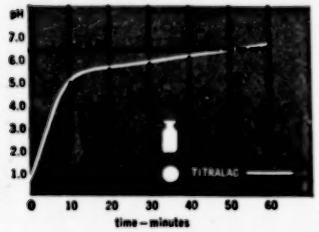
why a pH-time curve



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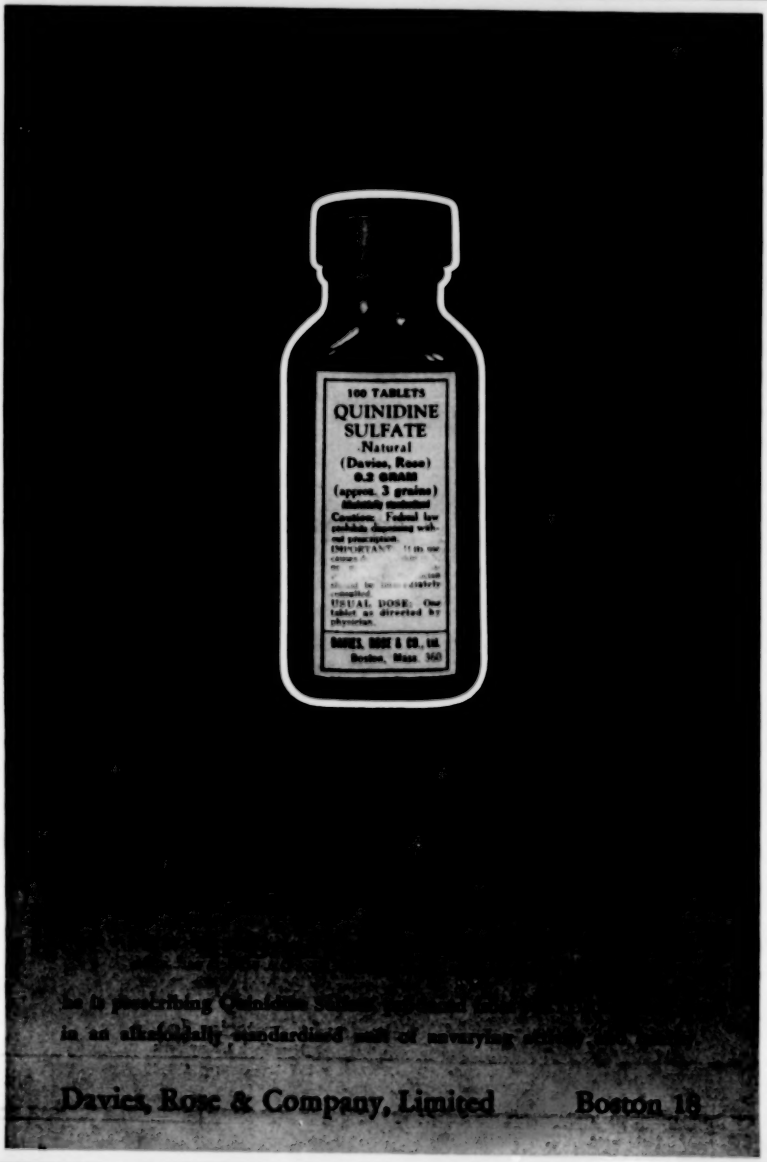
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Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

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*CALCIUM	1.12 Gm.
CHLORINE	900 mg.
COBALT	0.006 mg.
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FLUORINE	0.5 mg.
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*IRON	12 mg.
MAGNESIUM	120 mg.
MANGANESE	0.4 mg.
*PHOSPHORUS	940 mg.
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VITAMINS	
*ASCORBIC ACID	37.0 mg.
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PANTOTHENIC ACID	3.0 mg.
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VITAMIN B_{12}	0.005 mg.
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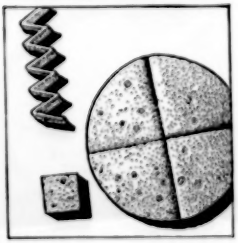

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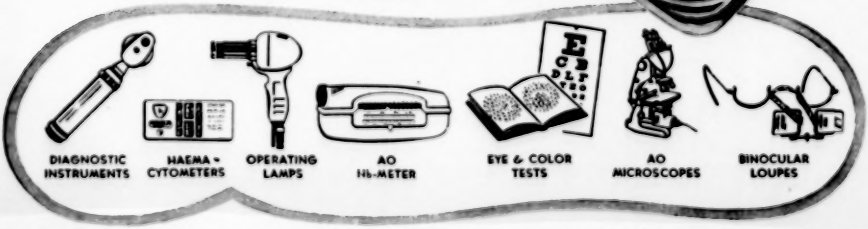

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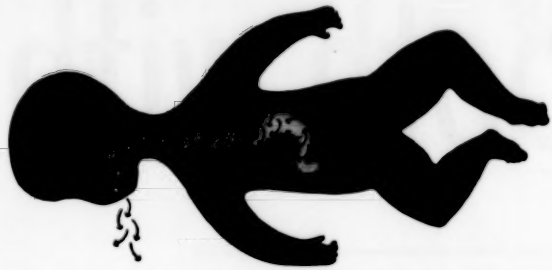

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1. Jeans, P. C., and Marriott, W. McK.: Infant Nutrition, St. Louis, C. V. Mosby, 1947, pp. 133, 334-336. 2. Brennemann, J. O., in Brennemann's Practice of Pediatrics, Hagerstown, W. F. Prior, 1949, vol. 1, ch. 26, p. 3.

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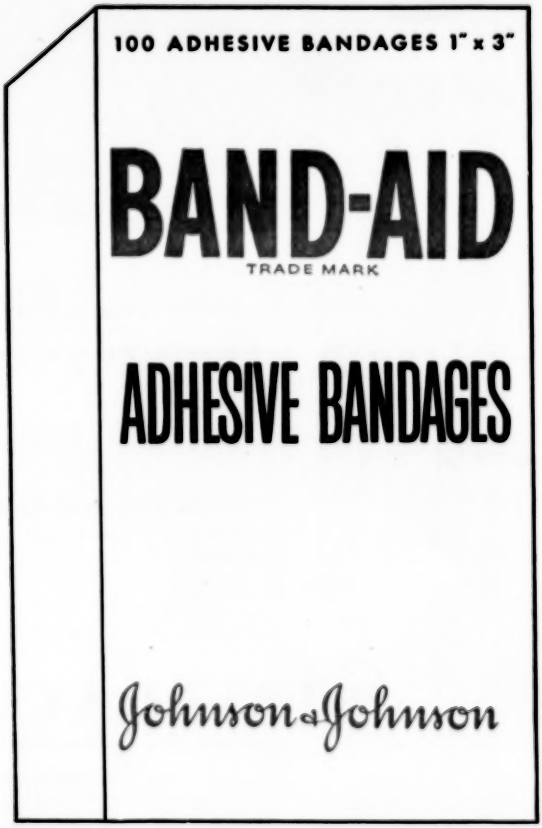

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CURRENT PROCEDURE IN MANAGEMENT OF OBSTRUCTION OF SMALL INTESTINE

Clarence Dennis, M.D., Pelham Manor, N. Y.

The mortality associated with acute obstruction of the jejunum or ileum has progressively improved since the 40% figures seen before Wangensteen's introduction of nasal suction siphonage. The most recent available figures suggest a mortality rate of about 11%.[1] Although the occurrence of ileac obstruction is therefore not as catastrophic now as it formerly was, it still commands a very real risk and is worthy of most thorough consideration.

Failure of the small intestine to transport and handle material normally may be due either to actual mechanical obstruction to the lumen thereof or to paresis of the musculature of the intestine. The latter condition is seen in inflammatory reaction surrounding the involved segment or occurs reflexly in association with such conditions as renal colic or retroperitoneal hematoma. It is with mechanical complete acute obstruction that this paper is concerned.

The anatomical factors underlying such obstruction, in the approximate order of frequency, are: (1) external hernias, (2) adhesions and adhesive bands, (3) intussusception, (4) gallstone obstruction, (5) volvulus, (6) internal hernias, and (7) neoplasms. This list does not include neoplasms that have disseminated throughout the peritoneal cavity, engaging the small intestine sufficiently to produce obstruction.

PATHOLOGICAL FEATURES

Pain.—There is no sensation of pain from the wall of the intestine upon crushing (unless nerve trunks are involved), or upon cutting or burning, but it is highly sensitive to stretching. When obstruction occurs, the peristaltic activity of the intestine above it brings fluid and gas in quantity to produce distention first of the area just above the block but ultimately all the way to the duodenum. It is the stretch due to this distention that is responsible for the typical pain of small intestine obstruction. There is support for the thesis that the waves of propulsive activity in the intestine come with somewhat greater frequency high in the ileum than lower down. In practice, an obstruction high in the ileum appears to be characterized oftener by a period of three to five minutes between peaks of crampy pain, and obstruction in the terminal ileum intervals between the pains that are as much as twice as long.

Tension on the root of the mesentery produces diffuse pain, which is noted maximally across the abdomen in some cases and maximally across the back in others. Rapidly developing edema or hemorrhage into the mesentery or retroperitoneally appears in some cases to be the only tenable explanation of back pain. Incomplete disappearance of pain in the abdomen between the cramps of ileac obstruction may be due, therefore, to rapid distention or to tension on or rapid swelling of the mesentery, which is seen especially in strangulating intestinal obstructions.

Borborygmus.—The term "borborygmus" means any intestinal sound due to flatus whether it is produced in normal or in abnormal circumstances. In the presence of supraobstructional distention, the stretch on the ileac wall is associated with a pitch of sound that is higher as the degree of tension is increased. In general, sounds above high C (512 vibrations per second) are heard in clinically developed obstruction of the ileum. Under this circumstance, a listener usually hears with his stethoscope a rush of splashing, gurgling sounds that start at a low pitch but in the course of half a minute or so rise to the high-pitched "tinkles" described. Arrival of a wave of peristaltic activity at the supraobstructional site of distention determines therefore both the peak of pain and the high-pitched borborygmi. The coexistence of these phenomena establishes the diagnosis of obstruction of the small intestine in more than 9 out of 10 cases.

Vomiting.—In the presence of small intestine obstruction, there is increased irritability of the intestine that is most distended, and retrograde peristalsis occurs, with dumping of the intestinal content into the stomach, from which much of it is vomited. The importance of vomiting

From the Department of Surgery, State University of New York, College of Medicine at New York City, Brooklyn 3.
Read before the Section on Surgery at the 102nd Annual Meeting of the American Medical Association, New York, June 4, 1953.

1. (*a*) Dennis, C., and Brown, S. P.: Treatment of Small Bowel Obstructions, Surgery **13**: 94, 1943. (*b*) Beecker, W. F.: Acute Adhesive Ileus: Study of 412 Cases with Particular Reference to Abuse of Tube Decompression in Treatment, Surg., Gynec. & Obst. **95**: 472, 1952. (*c*) Nemir, P.: Intestinal Obstruction: Ten-Year Statistical Survey at Hospital of University of Pennsylvania, Ann. Surg. **135**: 367, 1952.

as a component of the picture depends primarily on the level of obstruction. The reasons for this are apparent on review of the estimated volumes of fluid that pass a given point per day, as shown in the table.

An obstruction high in the ileum will result in huge losses of water, sodium, and chloride and some loss of potassium. In adults, the over-all effect is one also of alkalosis, as usually the loss of sodium is less than that of chloride. An obstruction in the terminal ileum is associated, on the other hand, with relatively little severe privation of fluid and salts, for most of the upper intestinal secretions are reabsorbed, at least in the first few days.

In patients, as in dogs experimentally, the vomitus begins to assume a fecal character in 3½ to 4 days after complete obstruction is established.[2] This is related to the length of time the material remains in the presence of the bacterial activity of the intestine, and is virtually unrelated to the level in the intestine at which the block has been established. An example is the fecal vomiting seen in obstruction of the distal loop in poorly patterned gastroenterostomy.

Dehydration.—From what has been noted above, it is apparent that dehydration is slow to develop in terminal ileac obstruction. It may be overwhelming, however, in two to three days in high ileac or jejunal obstruction.

Daily Volumes of Fluid That Normally Pass Several Levels of the Intestine

Level of Intestine	Vol. of Fluid
Duodenojejunal junction (ingested fluid, secretions of salivary, gastric, and duodenal glands, and of liver and pancreas)	8-10 liters
Midileum	8-10 liters ?
Ileocecal junction	0.5 liter

Distention.—Clinical distention as a consequence of obstruction is apparent in relation to the sum total of increased visceral volume. The jejunal obstruction is associated with distention of a short segment of intestine, and clinical abdominal distention is not marked. As one considers cases with blocks at progressively lower levels in the ileum, the length of intestine involved in distention is progressively greater and the degree of abdominal distention is usually progressively more pronounced.

Roentgen Findings.—The roentgen findings on flat and upright scout films of the abdomen are diagnostic in approximately five cases out of six. The ladder-like arrangement of gas-filled segments is a familiar picture. In obstruction of increasing duration, the ratio of gaseous to fluid content decreases, until there may be virtually no apparent gas at the end of seven or eight days.

Obstipation.—Failure of passage of gas or stool by rectum may not occur until one or two days after obstruction is established. Failure of return of anything more than the injected enema fluid thereafter is support for the diagnosis of obstruction.

Shock.—Depression of blood pressure, rapid, thready pulse, cold extremities, and collapse may result from withdrawal of a large share of the blood volume from the circulation. This may occur in acute strangulating obstructions involving more than one-third of the small intestine, in which the strangulating mechanism, whether a narrow hernia neck, a heavy adhesive band, or other agent, closes off the easily compressible veins before closing the more difficultly compressible arteries. As a consequence, blood is trapped in the involved segment, with hemorrhage and engorgement. When strangulation becomes established after several days of vomiting and privation, involvement of smaller segments of intestine may bring about shock, for under these circumstances there is already contraction of blood volume before strangulation takes place.

Signs of Peritoneal Irritation.—Escape of blood or of exudate into the peritoneal cavity causes sufficient reaction to produce clinical findings of parietal peritoneal irritation, such as abdominal spasm, tenderness to palpation, and rebound tenderness. Along with such localized findings, elevation of temperature and leukocytosis commonly accompany the inflammatory responses to strangulation.

CAUSES OF DEATH

The lethal factors fall naturally under three general headings: (1) salt and water imbalance, (2) strangulation and consequences thereof, and (3) prolonged distention with toxic absorption. It is apparent that the large water and salt loss of obstruction high in the small intestine must quickly lead to profound dehydration, salt loss, and alkalosis, with sunken eyes, loss of skin turgor, and dry and sticky tongue. The absence of sufficient water for adequate renal function is followed in but a few days by uremia as well. These factors are lethal if uncompensated.

The mechanisms by which strangulation may be lethal are dual. Shock, as indicated, may suffice. Gangrene may lead to perforation and peritonitis if the segment in question is in the peritoneal cavity, or to sepsis and possibly death if it is not in communication with the abdominal cavity, as in femoral hernia.

Prolonged distention has been known to alter the normal semipermeability of the intestinal mucosa since Sperling showed that a sustained tension of 15 cm. of water in the dog leads to vascular stasis and changes in the histology of the membrane,[3] lowering the viability of the intestine and opening an abnormal avenue of absorption, namely, the transperitoneal route. Poth and Knotts demonstrated that the products so absorbed are chiefly of bacterial origin, for they showed that the placing of succinylsulfathiazole in closed loops in the dog prolongs survival five fold.[4] R. M. Nelson has demonstrated that the products of the paracolon bacillus are among the factors involved and has worked out a technique of titrating the amount of the exotoxin of this organism in the blood stream of the dog in response to ischemia of the bowel wall.

PROPHYLAXIS AGAINST OBSTRUCTION

Certain definitive steps can be taken in the prevention of obstruction of the small intestine. It is obvious that external hernias, particularly femoral hernias, should be

2. Dennis, C.: Oblique, Aseptic, End-to-End Ileac Anastomosis, Procedure of Choice in Strangulating Small Bowel Obstruction, Surg., Gynec. & Obst. 77: 225, 1943.

3. Wangensteen, O. H.: Intestinal Obstructions, ed. 2, Baltimore, Charles C Thomas, Publisher, 1942.

4. Poth, E. J.; Knotts, F. L.; Lee, J. T., and Inui, F.: Bacteriostatic Properties of Sulfanilamide and Some of Its Derivatives: I. Succinylsulfathiazole, New Chemotherapeutic Agent Locally Active in Gastrointestinal Tract, Arch. Surg. 44: 187 (Feb.) 1942.

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carefully sought in routine physical examinations, and repair advised wherever obstruction is considered a possibility.

Inasmuch as postoperative adhesions are the second most important etiological agent in production of small bowel obstruction, the means to prevent them must be carefully considered. As in my experience, Nemir [1c] found the vast bulk of adhesive obstructions to be aftermaths of operations for gynecological problems, for appendicitis, and for idiopathic ulcerative colitis. In one period of review, I found that more than half of all strangulating obstructions at the University of Minnesota. Hospitals followed laparotomy for gynecological procedures.

Appendicitis with extension is notorious for production of manifestations of obstruction at the time of the acute process, but in those cases in which the policy was formerly to utilize conservative management, it was almost regularly observed that exploration for appendectomy six weeks later revealed no residual adhesions. One cannot escape the suspicion that the surgeon rather than the disease process is responsible for the late obstructive manifestations so commonly seen.

The surgical world was alerted to the dangers of talcum powder by Antopol [5]; and talc has been eliminated as a lubricant for surgeons' gloves by a large share of the hospitals in the country. Studies on adhesion formation at the University of Minnesota showed indeed that excoriation of the terminal ileum over a 12 in. (30 cm.) segment, followed by application of phenol or painting with 7% iodine solution was not productive of obstructive adhesions. Injection into the unopened abdomen of the dog of washings from two pairs of talc-treated surgeons' gloves was usually lethal, the mechanism being death from adhesion obstruction.[6] Talcum powder has been replaced in many hospitals by a partially hydrolyzed starch preparation, which is known to be removed by the body and to cause many fewer adhesions than talc.[7]

One cannot assume, however, that hydrolyzed starch is wholly innocuous if placed in the abdomen, for the most ubiquitous adhesions in my experience were seen on reexploration within two weeks after a laparotomy in which it was known that this agent alone had been left and only in small amount. The avoidance of deposition of any powder at all in the abdomen seems the safest prophylaxis against adhesion formation on this basis. Removal of glove powder by washing in a glove basin containing water or solution of some kind is common practice and is inadequate, for if one completes such a wash and watches as the gloves dry in room air, much of the powder may be seen still on the glove surface; especially is this true if several persons have preceded the observer in use of the powder basin. The most casual observation will convince the critical of the superiority of utilization of a wet abdominal pack for actually wiping the gloves clean, or preferably two packs in series (fig. 1). Prompt change of torn or punctured gloves during operations is obviously important from this point of view as well as from that of infection.

Additional factors in the prophylaxis of adhesions that are apparently of particular importance, especially in the early postoperative period, are the rigid avoidance of unnecessary trauma and attention to hemostasis. Rhoads and his associates have shown that clean, sharp dissection produces far less adhesion formation than blunt dissection.[8] Precise hemostasis is possible in most laparotomies with greater ease by the proper use of the coagulating current than by the customary clamp-and-tie technique. Reexamination of wounds in the experimental laboratory has confirmed this impression. The simplest procedure utilizes a fine-tipped hemostat such as a mosquito clamp or an Adson clamp for precise grasping of the bleeding vessel and coagulation by means of a cord clipped to the handle of the hemostat. Current is most easily controlled by the surgeon through the foot switch of the diathermy machine. Some practice is required to gain proficiency in the method and a nonexplosive anesthetic agent should be employed, but the dividends are real. There has been almost no adhesive obstruction after colectomy for idiopathic ulcerative colitis in my experience since adoption of this technique eight years ago.[9]

Fig. 1.—Proper method of removing glove powder before operation. Rinsing in a wash basin is dangerous because removal of powder is incomplete. Best results follow use of two cloths.

MANAGEMENT OF ACUTE OBSTRUCTION OF SMALL INTESTINE

For many years, I was a member of Wangensteen's staff at the University of Minnesota. A concerted effort was made by that group as a whole to evaluate fully and critically the role of nonoperative management of those cases of acute complete small intestine obstruction that failed to present any of the following evidences of actual or impending strangulation: history of sudden onset

5. Antopol, W.: Lycopodium Granuloma, Its Clinical and Pathological Significance Together with Note on Granuloma Produced by Talc, Arch. Path. **16**: 326 (Sept.) 1933.

6. Minge, R. K., and Dennis, C.: Effect of Diathermy upon Abdominal Adhesions; Experimental Study, Ann. Surg. **130**: 937, 1949.

7. Lee, C. M., Jr., and Lehman, E. P.: Experiments with Non-Irritating Glove Powder, Surg., Gynec. & Obst. **84**: 689, 1947.

8. Thomas, J. W.; Greene, J. W., Jr., and Rhoads, J. E.: Experimental Study of Factors Affecting Development and Persistence of Intraperitoneal Adhesions, in Surgical Forum, American College of Surgeons, 1950, Wangensteen, O. H., and others, editors, Philadelphia, W. B. Saunders Company, 1951, p. 125.

9. Dennis, C., and Karlson, K. E.: Surgical Measures as Supplements to Management of Idiopathic Ulcerative Colitis; Cancer, Cirrhosis and Arthritis as Frequent Complications, Surgery **32**: 892, 1952.

(suggested by McKittrick and Sarris [10]); back pain, shock, signs of peritoneal irritation, fever, leukocytosis, bloody intestinal drainage, palpation of "soggy" loops on bidigital pelvic examination [1]; evidence of hernia; and obviously strangulating mechanisms such as intussusception and gallstone obstruction.[2] In addition, each patient was reexamined and his condition reevaluated every four to six hours during the period of conservative management, and appearance of any one of these signs removed him to the operative group. The only other indications for operation were failure to decompress the intestine by intubation and failure of the obstruction to relent after decompression had been accomplished.[1a]

The results of concerted attention to this policy were gratifying indeed, and in the last year for which data are available to me, there were 2 deaths in 27 patients—a statistically insignificant rate of 7.4%.[1a] The difficulties in such a pattern arise from the observation that remarkable enthusiasm on the part of highly trained and experienced personnel is absolutely essential to maintain a sufficiently informed and alert watch on these patients. They arise, in addition, from such experience as mine; in two of my personal patients, both physicians, ultimate exploration because of failure to relent revealed strangulating mechanisms. Both men recovered, but it was the consensus that their risks would have been less and their hospitalizations shorter with earlier exploration.

To support the change in point of view toward early operation, several advances have contributed to the safety of that intervention. Some of these are as follows: (1) Smith and Brackney's rapid method of peroral intubation of the small intestine [11]; (2) Wangensteen's

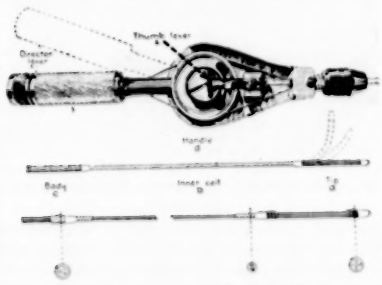

Fig. 2.—Flexible stylet with controllable tip of Smith and Brackney. After insertion of plastic tube on the stylet into the stomach, the tip can be directed to the pylorus under fluoroscopic control. (Reproduced from *Surgery* [27: 817, 1950] by permission of the publisher.)

technique of aseptic decompression of the distended intestine [3]; (3) my demonstration that healing of anastomotic lines in distended small intestine occurs smoothly and consistently if appropriate techniques are employed [2]; (4) removal of the entire block of contaminated tissue from the patient in certain types of obstruction; (5) the antibiotics; and (6) removal of the fear of production of new adhesions by surgical intervention.

Preparation of the Patient for Exploration.—With the decision that in virtually all cases of acute complete obstruction of the small intestine exploration should be done on admission of the patient to the hospital, certain additional measures for preparation are in order.

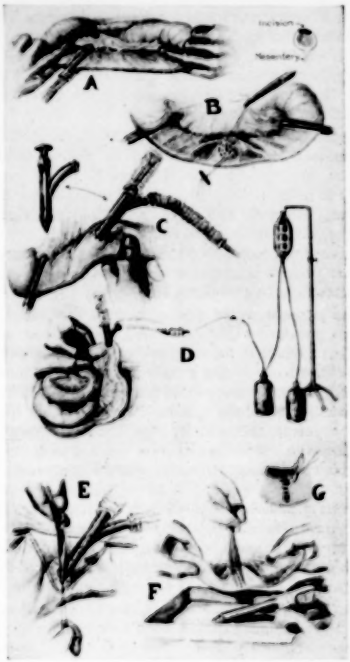

Fig. 3.—Modified Wangensteen aseptic decompressive suction enterotomy. *A*, method of emptying a distended segment of small bowel preparatory to enterotomy. *B*, placement of a double purse string to secure the bowel to the trocar. After placement of the purse strings, a 1 cm. incision in the center exposes the intact mucosa so that easy perforation will be possible with the plunger point. *C*, securing of trocar. Following perforation of the mucosa, the plunger is withdrawn and the catheter is slipped into the bowel. *D*, suction decompression. Very gentle lifting of the segments of bowel will direct content to the catheter. The entire small bowel can be delivered and emptied by this means, particularly if a three-foot catheter is employed. *E*, clean removal of the trocar. *F*, closure of the defect. *G*, completion of closure. The closure process may be eliminated altogether in strangulation if a segment is employed close enough to the necrotic bowel to permit block excision of the entire area with immediate anastomosis. (Reproduced from "Operative Technic in General Surgery," edited by W. H. Cole, as modified from "Intestinal Obstructions" by Wangensteen, with permission of Charles C Thomas, Publisher.)

If frank clinical dehydration is present, it may be reasonably assumed the patient has lost water equal to from 5 to 7% of his original body weight. Since the bulk of the fluid lost is vomitus, which contains about one-half the concentration of sodium chloride in plasma, this fraction of the body weight should be given in 0.45% sodium chloride solution containing 2.5% dextrose in the first few hours, with addition of the estimated daily require-

10. McKittrick, L. S., and Sarris, P. S.: Acute Mechanical Obstruction of Small Bowel; Its Diagnosis and Treatment, New England J. Med. 222: 611, 1940.

11. Smith, G. A.: Study of Intestinal Intubation Using Flexible Stylet with Controllable Tip, Surgery 32: 17, 1952.

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ment the first day. One-half this amount, or 3% of the body weight can safely be given the first hour, under the circumstances, while intestinal intubation is being undertaken and the initially drawn blood is being analyzed for sodium, chloride, potassium, bicarbonate, and total protein concentrations, and the balance, or the second 3%, given during the operation and the ensuing four to six

Fig. 4.—Placement of the anterior running catgut suture. The clamps have been rolled together. Removal of clamps. Tension is applied to the two ends of each of the running sutures, the clamps are carefully loosened until the tips are spread 1 or 2 mm., and the clamps are cautiously removed. (Reproduced from *Surgery, Gynecology and Obstetrics* [77: 25, 1943] by permission of the publisher.)

hours, with such alterations as may be dictated by the laboratory results. Lesser degrees of dehydration may be estimated clinically and by evaluation of the chemical determinations and corrected less vigorously.

Rapid Intubation of Small Intestine.—The method of Smith for the intubation of the small intestine depends on fluoroscopic control and a flexible stylet with a controllable tip (fig. 2). In Wangensteen's clinic, Smith was able to intubate the small intestine within one hour in 90% of 180 cases, most of which were cases of intestinal obstruction. Utilization of this method usually permits the surgeon to explore the abdomen within two to four hours of admission with a major share of the distention relieved. If the abdomen is opened in the presence of a good deal of residual distention, the Smith tube can usually be advanced under the manual control of both the surgeon and the tube operator, ordinarily with complete emptying of the intestine.

Aseptic Decompression at Laparotomy.—In certain instances the degree of distention prohibits passage of even the Smith tube, and the status of the bowel on laparotomy suggests it is too tense and friable to permit manipulative introduction of the Smith tube at that juncture. Under these circumstances, or when the Smith tube is not at hand, employment of a modification of the Wangensteen aseptic decompression technique [12a,b] upon the most distended segment that first comes to view regularly permits complete emptying down to the point of obstruction (fig. 3). Even if an adhesive band has cut into the bowel, it can be freed without gross spillage and proper repair accomplished.

Primary Anastomosis.—I reported 10 years ago a series of experiments in which dogs subjected to low ileac obstruction were relieved after three to eight days by resection of the area of block and primary end-to-end anastomosis. There was one failure in 16 dogs, an instance in which an obvious technical error was made. There were 2 deaths among 16 resections in clinical patients suffering from strangulating obstructions, neither owing to anastomotic failure. The technique employed was dependent on such a closed oblique anastomosis that unsullied serosal surfaces were approximated by interrupted sutures (fig. 4). Microscopic studies indicated that healing was as satisfactory in intestine previously distended by obstruction as in undistended intestine.[2]

The coming of the antibiotics has increased the safety of this procedure, and may indeed have lessened the need for closed anastomosis in elective cases. In emergency cases in which the adequacy of intestinal antisepsis is at best equivocal, it remains to be shown that any other method can match the security of the closed technique. The method is apparently most secure as a one-layer silk approximation. The germ of the method is shown in fig. 4, but earlier articles describe the complete technique.[12a,c]

ANTIBIOTICS

Studies of Poth and his associates have led to recognition of a whole series of agents that are effective in destruction of intestinal pathogens.[4] Some of these, such as neomycin, are reported to sterilize a segment of intestine in 20 minutes.[13] The survival period in experimental strangulating obstruction is markedly prolonged also by intravenous administration of some of the antibiotics, such as chlortetracycline (Aureomycin).[14]

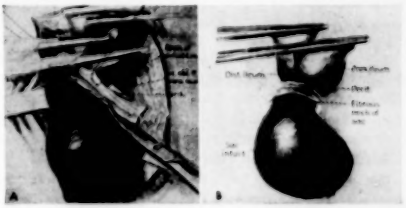

Fig. 5.—Repair of femoral hernia with gangrenous bowel. *A*, separation of neck of sac with retention of intact fibrous ring. *B*, femoral hernia sac removed intact with fibrous ring of neck and contained necrotic intestine. Reconstruction of the inguinal region was straight-forward. In one of nine cases, the hernia recurred a year later. (Reproduced from *Surgery* [22: 312, 1947] by permission of the publisher.)

It is comforting to know that the period of requirement of absolute preservation of the serosa from contamination by intestinal contents has apparently passed. It is

12. (*a*) Dennis, C.: Surgery of Small Intestine, Operative Technic in General Surgery, Cole, W. H., editor, New York, Appleton Century Crofts, Inc., 1949. (*b*) Wangensteen [5] (*c*) Dennis.[5]

13. Poth, E. J.; Fromm, S. M.; Wise, R. I., and Hsiang, C. M.: Neomycin, New Intestinal Antiseptic, Texas Rep. Biol. & Med. 8: 353, 1950.

14. Morton, J. H.; Furth, F. W.; Hinshaw, J. R., and Schilling, J. A.: Use of Aureomycin in Experimental Intestinal Obstruction, Ann. Surg. 134: 1007, 1951.

platitudinous on the other hand to state that minimization of such contamination, and intravenous employment of chlortetracycline or oxytetracycline (Terramycin), from the time of admission to the hospital combine to make the ordeal as safe as possible.

Block Resection of Contaminated Fields.—The block resection of the intact sac and contents in gangrenous femoral hernia with utilization of primary end-to-end intestinal anastomosis has reduced the mortality in this lesion from 60% to the neighborhood of 10% (fig. 5).[15] It is a technique that is applicable, though with considerable difficulty, to strangulating inguinal hernia as well.

The same principle applies to the resection of intussusceptions too difficult to reduce, in which the risk of resection is less than that of persistent efforts to achieve reduction.[16] In the original series reported, there were no deaths in 10 cases of such resection, but one patient died in the year subsequent to that report.

Removal of Fear of New Adhesions.—As indicated under prophylaxis, proper management during laparotomy should minimize the risk of fresh adhesion formation secondary to exploration for intestinal obstruction.

SUMMARY

The etiological and physiological factors involved in obstruction of the small intestine must be fully appreciated to permit successful management by any program of therapy. Although it has been shown possible to achieve a low mortality rate in the management of acute complete obstruction of the small intestine by nonoperative means, there are still cases of strangulation that are not recognizable without exploration. When acute complete obstruction of the small intestine is not known to be associated with complete fixation by adhesions, exploration should be done in the two to four hours after hospital admission.

New developments have made risks of such early intervention small by former standards. These are the Smith-Brackney rapid method of intubation of the small intestine, Wangensteen's aseptic decompression, the methods of primary anastomosis in the face of obstruction, the removal of the entire contaminated area of tissue en bloc in certain types of strangulation, the coming of the antibiotics, and refined surgical methods for the removal of fear of production of new adhesions by surgical intervention.

989 Edgewood Ave.

15. Dennis, C., and Varco, R. L.: Femoral Hernia with Gangrenous Bowel, Surgery **22**: 312, 1947.

16. Dennis, C.: Resection and Primary Anastomosis in Treatment of Gangrenous or Non-Reducible Intussusceptions in Children; Safe, Simple One-Layer Silk Anastomosis, Ann. Surg. **126**: 788, 1947.

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ROENTGEN STUDIES IN SUPPURATIVE PNEUMONIA OF INFANTS AND CHILDREN

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and
Frank Velios, M.D., Indianapolis

Acute suppurative pneumonias have long been recognized as a problem of major importance to the pediatrician. This type of pulmonary disease finds its greatest incidence and mortality in infants and young children. Although its over-all incidence is estimated [1] to account for less than 10% of all childhood pneumonias, it probably causes more deaths than other forms of inflammatory reaction in the lungs. In a series of cases reported by Watkins [2] and associates in 1948, the mortality was 57% for children of all ages and 100% for infants.

The greater morbidity of suppurative pneumonia is attributable to the overwhelming toxicity, the tendency to form pulmonary abscesses, the pleural complications, and metastatic phenomena. In spite of the effective control of pneumonic infections by antibiotics, however, a relatively high mortality from suppurative pneumonias continues. Since the development of penicillin, the mortality rates have been reported as reduced to 33% for children and 40% for infants.[2]

As a corollary to this, roentgen examination of infants and children currently hospitalized for respiratory infections has shown a steady decline in the number of primary alveolar pneumonias and an increase in the proportion of patients showing the roentgenographic characteristics of suppurative pneumonia. This paper will emphasize the principal signs by which suppurative pneumonias may be recognized roentgenologically and will evaluate their specificity.

MORPHOLOGY

Morphologically, pneumonias have been classified [3] as primary alveolar, when the involvement is limited to the alveolar spaces, and secondary interstitial, when the supporting structures around the bronchi and air sacs are also involved. Suppurative pneumonias are of the latter type in that the infecting organisms invade the bronchial walls, peribronchial tissues, and interstitial structures as well as the alveoli. Alveolar pneumonia disables chiefly by reducing the patient's vital capacity through consolidation. Suppurative pneumonia adds to this the suffocating effects of bronchial edema and parenchymal necrosis.

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Read before the joint meeting of the Section on Pediatrics and the Section on Radiology at the 102nd Annual Meeting of the American Medical Association, New York, June 2, 1953.

1. Neuhof, H., and Thomas, A.: Acute Suppurative Bronchopneumonia, Arch. Int. Med. **75**: 45 (Jan.) 1945.

2. Watkins, C. G.; Tichenor, R. W.; Robb, J. A., and Forbes, G. B.: Treatment of Staphylococcic Pneumonia and Empyema with Penicillin: Report of 6 Cases, 2 with Pulmonary Pneumatocele, Am. J. Dis. Child. **76**: 648 (Dec.) 1948.

3. Diagnostic Roentgenology, Golden, R., editor, Baltimore, Williams & Wilkins Company, 1952, vol. 2.

Whether one or the other types of inflammatory reaction will occur seems to depend largely on the type and pathogenicity of the etiological agent.

PATHOLOGY

The disease occurs chiefly by bronchogenous invasion. Studies made at autopsy [4] suggest that the infection descends from the upper respiratory passages and spreads progressively into the peripheral portions of the bronchial tree. Extension continues by the lymphatics and interstitial tissues into the pulmonary parenchyma. Neuhof and Hirshfeld [5] stress that this extension by the bronchial pathways accounts for the peripheral location of the suppurative lesion and the segmental distribution of the process. The tendency to involve bronchopulmonary segments gives rise to characteristic cone-shaped areas of parenchymal infiltration. The base of such a cone contacts a large pleural surface, which probably explains the high frequency of empyema in these patients.

In addition, multiple small coalescing abscesses clustered about the bronchioles in the lung periphery invite the formation of bronchopleural fistulas. The resulting tension pyopneumothorax may jeopardize the infant's life. In contrast, the pulmonary lesion of hematogenous origin rarely leads to such complications. Basically, the suppurative pneumonias show two general patterns. The first is an acute fulminating disease without tissue necrosis. The second is an acute suppurative process showing diffuse or local involvement of the lung pleura.

ETIOLOGY

The suppurative pneumonias in children are so frequently caused by Micrococcus (Staphylococcus) pyogenes var. aureus that many use the term as synonymous with micrococcic (staphylococcic) pneumonia. This may be the causative organism in the majority of instances, but there are notable exceptions. First, it has been pointed out that micrococcic pneumonias occur frequently as a complication of virus infections [6] and epidemic influenza.[7] In one series, about 50% of patients who died of epidemic influenza showed M. pyogenes in the lung cultures at post mortem.[8] Likewise, in infants debilitated by fibrocystic pancreatic disease, the suppurative pulmonary complications are usually due to M. pyogenes. Less frequently encountered etiological agents are various streptococci, Friedländer's bacillus, Proteus organisms, and pneumococci. In addition, a very similar pulmonary process may occur in the acute suppurative phase of bronchogenous tuberculosis.

DIAGNOSIS

Only the isolation of the organism in pure culture directly from the lung or pleural cavity constitutes reliable proof of etiology. Nose and throat cultures are not positive evidence of micrococcic pneumonia. The incidence of such cultures is no greater than in unrelated conditions. In fact, sterile cultures may be obtained from the empyema fluid in some patients. This lack of correlation between the routine bacteriological tests and the type of pathological condition in the lungs makes it necessary for the pediatrician to rely on the clinical and roentgen studies for a working diagnosis in most instances.

Roentgenographic Features. — Several distinctive roentgenographic features are seen during the development of acute suppurative pneumonia. These are not present in all patients, nor do they occur in any regular sequential order. Perhaps the most consistent feature is the rapidly changing roentgen picture. A roentgenogram of the chest may show an area of homogeneous pneumonic infiltration on one day and, after a short interval, reveal a large pulmonary cavity with a fluid level. After this, a large collection of fluid in the pleural cavity may completely obscure the parenchymal changes. This picture may again change to one showing tension pneumothorax and severe mediastinal displacement. These striking changes are of considerable importance because they frequently occur in the presence of an unchanging clinical course. At times, the paradoxical roentgen observations may be confusing to the clinician. In the presence of overwhelming toxicity, the roentgenogram may show only mild emphysema, while during convalescence the roentgen studies may show pulmonary and pleural invasions that are out of proportion to the clinical manifestations.

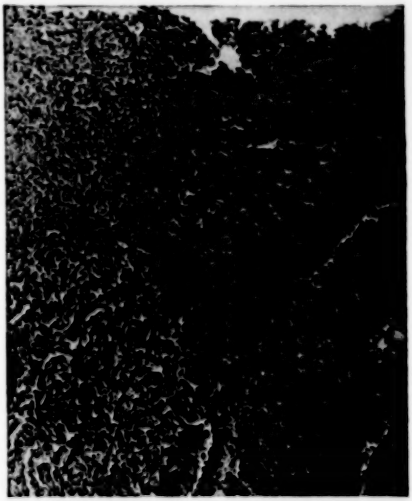

Fig. 1.—Histological abnormality of pneumatocele. The cyst is lined by exudate and a thin layer of granulation tissue. The bronchiole filled with exudate is continuous with the cavity where there is a break in the continuity of the bronchiolar wall. Elsewhere in the lung there are small abscesses.

4. Reimann, H. A.: Primary Staphylococcic Pneumonia, J. A. M. A. **101**: 514 (Aug. 12) 1933.

5. Neuhof, H., and Hirshfeld, S.: Suppurative Pleuritis in Children: Its Pathogenesis, Diagnosis, and Treatment, Am. J. Dis. Child. **44**: 973 (Nov.) 1932.

6. Scadding, J. G.: Lung Changes in Influenza, Quart. J. Med. **6**: 425 (Oct.) 1937.

7. Finland, M.; Peterson, O. L., and Strauss, E.: Staphylococcal Pneumonia Occurring During an Epidemic of Clinical Influenza, Tr. A. Am. Physicians **56**: 139, 1941; Staphylococcic Pneumonia Occurring During Epidemic of Influenza, Arch. Int. Med. **70**: 183 (Aug.) 1942.

8. Michael, M., Jr.: Staphylococcus Aureus Pneumonia with Special Reference to Its Occurrence as Complication of Influenza, J. A. M. A. **118**: 869 (March 14) 1942.

Pneumatoceles.—A second characteristic roentgenographic feature of suppurative pneumonia is the appearance of one or more cyst-like hyperventilated rarefactions called pneumatoceles. According to Conway,[9] these constitute a special form of emphysematous interstitial cavity. The pathogenesis of these pneumatoceles is suggested by the histological findings in surgical material (fig. 1). There is first a development of a peribronchial abscess that follows penetration of the bronchial wall by the invading organism. If a perforating bronchial communication occurs, the suppurative abscess is evacuated, and an air-containing cavity results in the interstitial substance of the lung. A check valve mechanism in the bronchial fistula permits rapid emphysematous inflation of this cavity. Shifting fluid levels due to purulent exudate within the cavity may appear and disappear roentgenographically during the course of the lesion.

Early in its formation, the pneumatocele may be lined with a loosely organized, rather thin layer of granulation tissue. This lining becomes progressively thinner as the cavity enlarges under tension. With further resolution

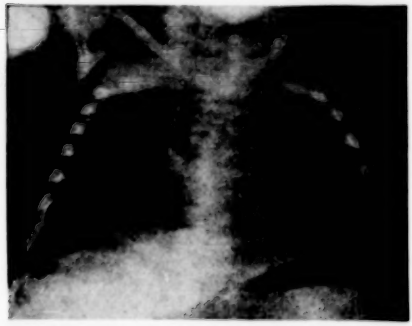

Fig. 2.—Pneumatocele in suppurative pneumonia. Classical thin-walled tension air cyst characteristic of suppurative pneumonia is seen in the right lung. There is emphysema of the remainder of the right lung.

of the inflammatory process, the classical thin-walled cyst is formed (fig. 2). The wall of these cavities will appear considerably thicker when they contain fluid. This appearance is more frequently seen early, and it is in this stage that they are mistaken for necrotic abscess. Pneumatoceles spontaneously disappear as infection subsides because of loss of the valvular mechanism in the bronchial wall with immediate reexpansion of the surrounding lung (fig. 3). This process, however, may require months.

According to Blumenthal and Neuhof,[10] the sudden appearance of these cysts on the roentgenogram, which previously revealed no area of rarefaction, virtually proves the presence of micrococcic pneumonia when it occurs in an infant, and it makes the diagnosis probable when encountered in a young child. At times, pneumatoceles are mistaken for congenital irreversible bronchial cysts and are removed surgically. According to Caffey,[11] this error is unwarranted, since in his experience most cysts demonstrated roentgenologically in infants are acquired and disappear spontaneously.

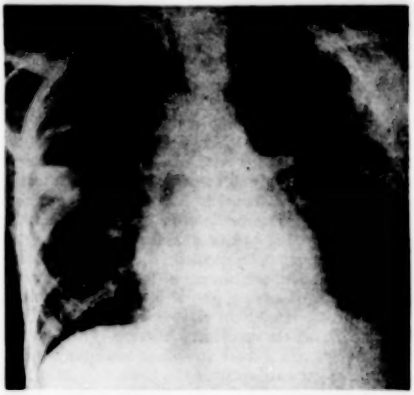

Fig. 3.—Parenchymal changes in suppurative pneumonia. Multiple pneumatoceles are present in both lungs. There is also segmental emphysema.

Infiltrative Features.—The parenchymal changes seen on roentgenographs are densities of the focal, segmental, or lobar type. Various combinations of these infiltrations are the rule, and these frequently give rise to bizarre images. The tendency for the parenchymal changes to correspond to the course of bronchi, blood

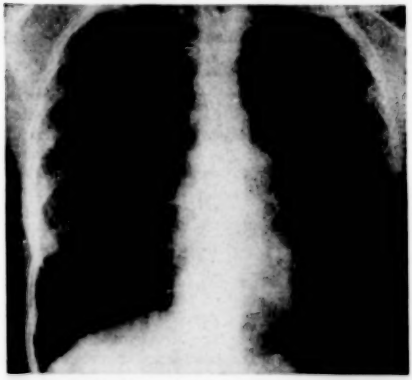

Fig. 4.—Pneumatoceles seen in figure 3 completely resolved after 14 months.

vessels, and the interlobar fissures indicates the presence of multiple inflammatory occlusions in the bronchi of the second and third order. When lobar areas of density do occur, they are more frequently due to confluent atelectasis than to pure consolidation. Because of the

9. Conway, D. J.: Origin of Lung Cysts in Childhood, Arch. Dis. Child. **26**: 504 (Dec.) 1951.

10. Blumenthal, S., and Neuhof, H.: Staphylococcic (Suppurative) Pneumonia in Infancy and in Childhood and its Surgical Aspects, Am. J. Dis. Child. **72**: 691 (Dec.) 1946.

11. Caffey, J.: Natural Regression of Pulmonary Cysts During Early Infancy, Pediatrics **11**: 48 (Jan.) 1953.

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bronchogenous spread, different roentgenologic stages of involvement are seen simultaneously, with changes disappearing in one lobe while they are developing in another.

The acute abscesses of suppurative pneumonia are tiny and multiple. When bronchial fistulas occur, they are converted into pneumatoceles. Otherwise, they are manifest roentgenologically as solid confluent densities

Fig. 5.—Tension pyopneumothorax in suppurative pneumonia. Sudden pleuropulmonary perforation gives this most characteristic roentgen picture in infants. The distended tension cavity displaces the mediastinum sharply to the left. The right lung is collapsed, but a pneumatocele is visible in the right cardiophrenic angle. There is an empyema fluid level across the right base.

rather than cavities. Typical chronic lung abscess rarely develops.

Pneumothorax.—As pointed out by Forbes,[12] the occurrence of a nontraumatic pneumothorax in an infant should immediately suggest the presence of an underlying micrococcic pneumonia. It is attributed to rupture of a tiny subpleural abscess or pneumatocele in check valve communication with a smaller bronchus. This type of bronchopleural fistula results in the development of empyema with alarming degrees of tension pneumothorax (fig. 5). It is more commonly observed in early infancy.

Small degrees of pneumothorax may be found early in the course of empyema formation in many infants if searched for on expiration films. The roentgen detection of such a perforating pleuropulmonary lesion should signify primary suppurative lung disease until proved otherwise. Similar results occur in cases of fibrocystic and xanthomatous infiltration of the lung, but here too, there is generally a complicating secondary suppuration.

Pleuritis and Empyema.—Pleural complications are of two types: diffuse and localized. The diffuse form develops in rapidly progressing suppuration. Tension pyopneumothorax takes place before adhesive pleuritis forms. If localized suppuration develops, however, the pleural disease is confined to the area of consolidation. A suppurative pleuritis ensues, with gradual formation of pleural adhesions. The resultant empyema or pyopneumothorax is encapsulated. It is important not to mistake the encapsulated tension pleural cavities for pneumatoceles, since the former may require surgical management. It has been estimated by Forbes [12] that over 90% of infants under 6 months of age in whom empyema develops had micrococcic pneumonias.

Emphysema.—Segmental or diffuse forms of alveolar emphysema are a common feature of all bronchogenous suppurative infections because of the intramural bronchial edema. Interstitial emphysema is not usually seen except as it follows bronchial perforation in the formation of pneumatoceles. The segmental emphysema accompanies the inflammatory bronchial occlusions and is seen along with roentgenographic evidence of atelectasis and exudative reaction.

Diffuse obstructive emphysematous manifestations are most striking during the early stages of an acute diffuse suppuration (fig. 6). This is the fulminating variety and is rapidly fatal unless the patient responds well to antibiotics. The pathological process is widespread, with involvement of many scattered bronchopulmonary segments. There is overwhelming toxicity, and a necrotizing tracheobronchitis causes a diffuse emphysema of such magnitude as to obscure the infiltration in the lungs. Suppuration is present, but the toxemia terminates the illness

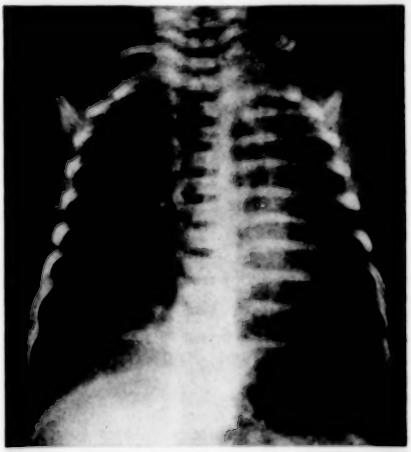

Fig. 6.—Diffuse obstructive emphysema in suppurative pneumonia. There is marked obstructive emphysema with a greater degree of involvement in the right lung. The underlying bronchopneumonia changes are obscured by the severe emphysema. Micrococcus pyogenes var. aureus was cultured from the lungs at autopsy.

before pleural invasion occurs. The paradoxical observations of clear lung fields (often interpreted as normal) in a dyspneic infant with clinical signs of severe bronchopneumonia spell an omnious prognosis to the pediatrician.

12. Forbes, G. B.: Diagnosis and Management of Severe Infections in Infants and Children: Review of Experiences Since Introduction of Sulfonamide Therapy, J. Pediat. 29:45 (July) 1946.

STATISTICAL ANALYSIS

An attempt was made to correlate the roentgenographic features with laboratory proof of etiology. In 85 cases reviewed for this purpose, 20 were excluded because no roentgen examination was available and 25 were not included because the laboratory confirmation was incomplete. Forty patients in whom pyogenic organisms were cultured from autopsy material, empyema fluid, and multiple blood samples had roentgen examinations. Twenty-nine of these showed roentgen changes characteristic of suppurative pneumonia. In these 29 there were 11 instances of rapidly changing roentgen picture, 15 of pneumatocele, 7 of nontraumatic pneumothorax, 16 of pleuritis or empyema, and 10 of emphysema. These specific findings occurred in addition to infiltrative changes. Of 14 cases proved by autopsy, 9 were diagnosed according to these roentgenographic changes as suppurative pneumonia.

We have found nose and throat cultures for micrococci positive in over 85% of all pediatric admissions. This criterion of diagnosis for micrococcic pneumonia is therefore unreliable. It would seem that micrococci most frequently become pathogenic when the infant's resistance is lowered by other disease or constitutional factors.

SUMMARY AND CONCLUSIONS

An unequivocal diagnosis of suppurative bronchopneumonia is probably never justified on roentgen examination alone. Nevertheless, in most instances the roentgen studies show a sufficiently high order of specificity to provide an early recognition of this type of disease. Roentgenograms taken at judiciously spaced intervals serve as an invaluable guide for therapy by disclosing the type and extent of the pleuropulmonary complications.

There is no useful correlation between the nose and throat cultures and the etiology of the lung disease. Positive identification of the infecting organism can be achieved only by culture from the lung or pleural cavity. For this reason, roentgen examination becomes the simplest and most practical means of establishing a working diagnosis.

In an infant or younger child, certain roentgen observations closely approach pathognomonic significance. The most reliable is the occurrence of a nontraumatic tension pneumothorax. With few exceptions, pulmonary pneumatoceles are the result of interstitial suppurative invasion of the lung. A combination of diffuse emphysema, rapidly changing parenchymal signs, and diffuse or loculated empyema signify the presence of suppurative pneumonia in the great majority of instances. Although these results of roentgen studies do not specify the type of infecting organsim, they are usually caused by M. aureus occurring at times as a complication of virus or influenzal infection. Proper utilization of roentgen examination will help to obviate the high infant mortality incident to suppurative pneumonias by supplying the pediatrician with an earlier diagnosis and more specific indications for surgical intervention.

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ARTERIOGRAPHY AND VASCULAR STUDIES IN PAGET'S DISEASE OF BONE

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Arteriovenous fistulas may be present in Paget's disease of bone; the question remains whether they are the primary cause of this disease or merely secondary manifestations. We have done special studies of three patients who had osteitis deformans. In the first patient, arteriograms of the involved lower extremity were done. In the second patient, both arteriograms and special vascular studies, including determination of femoral venous pressure, studies of circulation with Evans blue (T-1824), and simultaneous measurement of the oxygen content of blood in both femoral veins, were done. Only the special vascular studies were done in the third patient.

Fellow in Surgery, Mayo Foundation (Dr. Storsteen), and from the Section of Orthopedic Surgery, Mayo Clinic (Dr. Janes).

1. Reboul, H.: L'artériographie des membres et de l'aorte abdominale: étude critique, Paris, Masson et Cie, 1935, 136 pp.

2. (a) Moore, S.: Observations on Osteitis Deformans, Am. J. Roentgenol. **10**: 507-518 (July) 1923; Osteitis Deformans; Theory of Its Etiology, J. Bone & Joint Surg. **33-A**: 421-430 (April) 1951. (b) Pereira Torres, R. A., and Lazzari, A.: La insuficiencia cardiaca en la osteitis deformante de Paget, Rev. Asoc. méd. argent. **64**: 90-91 (Feb. 15-28) 1950. (c) Sornberger, C. F., and Smedal, M. I.: The Mechanism and Incidence of Cardiovascular Changes in Paget's Disease (Osteitis Deformans): A Critical Review of the Literature with Case Studies, Circulation **6**: 711-726 (Nov.) 1952.

The literature contains few reports of arteriograms in extremities of patients who had osteitis deformans. Reboul [1] mentioned such a case, however, in which the lower extremity was involved. He stated, "One notices the considerable development of vascularity. All the arteries have a very large caliber. The collaterals are numerous."

We could find no records in the literature of the venous pressure, circulation time, or venous oxygen saturation of the involved extremity in Paget's disease of bone. However, several authors have demonstrated in detail an increased cardiac output and increased blood flow in bones in widespread osteitis deformans. The increased demand on the heart produces a decrease in cardiac reserve, and this predisposes to cardiac enlargement and failure.[2]

REPORT OF CASES

CASE 1.—A 58-year-old white man, a truck driver, came to the Mayo Clinic in May, 1950, complaining of painless swelling of the left lower leg of three years' duration. No history of trauma was apparent. The mass increased in size when the leg was dependent and receded when the patient was recumbent. It had displayed little increase in size since its initial appearance. The patient had sustained a fracture of

the neck of the right femur in 1940. He was not told that this was of a pathological type; treatment consisted of application of a cast for four months.

The patient stood with the trunk bent forward at an angle of about 10 degrees. The blood pressure was 166 mm. Hg systolic and 100 mm. Hg diastolic. All motions of the right hip were moderately limited but painless. All borders of the left tibia were prominent, and the lower third of the left leg

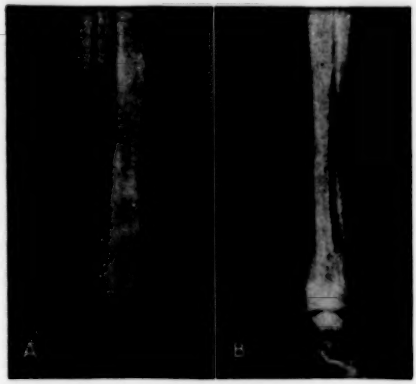

Fig. 1.—Arteriograms of left lower extremity in case 1 show extensive degree of Paget's disease and increased vascularity; *A*, anteroposterior view and, *B*, lateral view.

was swollen and had a doughy consistency. The cutaneous temperature of the lower part of the left leg was greatly increased. A pulsating mass about 2 in. (5.08 cm.) in diameter was located 2 in. above and anterior to the lateral malleolus on the left. No bruit could be heard. Pulsations of the femoral, popliteal, posterior tibial, dorsalis pedis, ulnar, and radial arteries were all normal.

Results of routine laboratory tests were normal except for a grade 2 pyuria. The value for alkaline phosphatase in the serum was 19.0 King and Armstrong units, and that for acid phosphatase was 1.1 units. Roentgenograms of the lower extremities showed the presence of typical Paget's disease in the upper part of the right femur and the lower half of the left tibia.

The arteriograms showed a considerable increase in the collateral blood supply, especially about the periphery of the osseous lesion involving the distal half of the left tibia (fig. 1). No definite arteriovenous fistulas could be seen.

CASE 2.—A 52-year-old white salesman came to the clinic in May, 1952, because of pain in the left leg of one and a half years' duration. He first had noted a deformity of the left knee two and a half years previously; a roentgenogram of this region in 1950 showed evidence of osteitis deformans. The patient had aching of the upper part of the left tibia and swelling of the left leg when he was on his feet for any extended period. Relief was obtained by rest. He had little nocturnal pain. The history revealed no report of trauma to the left leg, but the man had sustained a fracture of the right leg at the age of 10 years.

The blood pressure was 136 mm. Hg systolic and 90 mm. Hg diastolic. A varus deformity of the left knee was present and was associated with some bony enlargement. Increased warmth was noted over the upper portion of the left tibia. No joint tenderness was present.

Results of routine laboratory tests were normal. The basal metabolic rate was −3%. The value for serum calcium was 9.5 mg. per 100 cc., and that for phosphorus was 3.1 mg. The alkaline phosphatase value was 15.1 King and Armstrong units. Roentgenograms showed the findings of Paget's disease in the upper part of the left tibia with flaring of the upper portion of the tibia, probably caused by softening of the bone.

Arteriograms disclosed increased vascularity anterior to the upper portion of the left tibia (fig. 2). No definite arteriovenous fistulas could be seen.

CASE 3.—A 49-year-old white woman, a medical secretary, came to the clinic in February, 1953, stating that a year ago she had bruised the upper half of the right tibia. This region had remained slightly tender, and she complained of a sense of deep, diffuse discomfort in it. A sister had had Paget's disease of bone.

The patient's blood pressure was 112 mm. Hg systolic and 74 mm. Hg diastolic. Slight anterior prominence over the upper end of the right tibia was present; this region was tender and warm and showed a cluster of superficial veins. All peripheral arterial pulsations were normal.

Results of routine laboratory tests were normal. The value for serum phosphorus was 3.9 mg. per 100 cc.; the alkaline phosphatase value was 5.9 Bodansky units. Roentgenograms of the right leg showed evidence of Paget's disease involving the upper half of the right tibia with great thickening of the cortex. No arteriogram was done.

STUDIES OF CIRCULATION

The table shows the results of studies of circulation performed in cases 2 and 3. In case 2, a slight increase was noted in venous pressure, together with a substantial increase in the venous oxygen saturation of the extremity

Fig. 2.—Arteriogram of left lower extremity in case 2 shows Paget's disease of the upper part of the tibia and increased vascularity about the knee.

affected by osteitis deformans. The curve of Evans blue did not indicate a difference in circulation times between the two extremities, but this does not rule out the possibility of arteriovenous communications, especially multiple small ones. Differences in circulation times usually

are noted when large arteriovenous fistulas are present.[3] The data in case 3 show perhaps a slight increase in venous oxygen saturation of the extremity affected by Paget's disease. It is possible that the early and minimal involvement of bone in this case was insufficient to cause the circulatory abnormalities observed in case 2.

COMMENT

One may consider an arteriovenous shunt as the cause of the increased vascularity shown by both arteriograms and by the significantly increased venous oxygen saturation and increased venous pressure of the affected extremity in case 2. Edholm and co-workers [4] noted that, in addition to the abnormally high cutaneous temperature of the affected parts in Paget's disease, dilatation of the heart and signs of cardiac failure combined with a high pulse pressure were often present. They recorded a cardiac output of 13.3 liters per minute in such a patient; this is extremely high. (Normal output is about 4 liters per minute.) When the signs just enumerated are combined with an increased cardiac output, one must consider anemia or arteriovenous aneurysm as the most likely diagnosis.

Results of Circulatory Studies of Femoral Veins in Patients with Paget's Disease of Bone

Case	Lower Extremity	Venous Pressure, Cm. of NaCl Solution *	Curve of Evans Blue (T-1824)	Simultaneous Venous Oxygen Saturation, %
2	Right	6.8	Normal	62
	Left	8.0	Normal	91
3	Right	4.6	Normal	75
	Left	4.8	Normal	68

* Expressed as height of column of fluid extending above midvertical plane of thorax when patient is supine.

The patient observed by Edholm's group was not anemic and did not have a traumatic or congenital arteriovenous aneurysm. These investigators thought that arteriovenous communications in the bones affected by Paget's disease might well be the cause of the arteriovenous shunt. Therefore, they applied cuffs to the thigh at a pressure greater than systolic, inserted a catheter into the right auricle, and noted (1) decrease in right auricular pressure, (2) slowing of the pulse, (3) decrease in cardiac output, and (4) slight increase in diastolic pressure. Their observations appear to indicate that multiple arteriovenous shunts are present in bones affected by Paget's disease, because the same responses as those just mentioned occur after partial occlusion of the afferent vessels of an arteriovenous aneurysm.

Edholm and associates also measured the blood flow through the diseased bone by means of a modified Lewis-Grant plethysmograph and found it to be 20 times greater than the flow through normal bone; the normal rate was about 1 cc. per minute per 100 cc. of bone. Their data indicated that an increase of blood flow in bone occurs in widespread Paget's disease that is of sufficient magnitude to produce effects on the general circulation similar to those resulting from free arteriovenous communications. They noted the absence of significant increases in cardiac output in two cases of localized Paget's disease. This suggests that it is only when the disease becomes widespread that the circulation as a whole is greatly increased; in such cases, signs of cardiac failure may develop.

Pereira Torres and Lazzari [2b] also have reported a case of generalized Paget's disease of bone in which cardiac enlargement and failure were present. They considered the latter difficulties to be caused by an increased blood flow. They postulated that the increased blood flow was the result of numerous arteriovenous fistulas in the affected bone.

SUMMARY AND CONCLUSIONS

Studies were made in three cases of osteitis deformans to determine if arteriovenous fistulas were present in the diseased extremity. Arteriograms showed increased vascularity in the region of osteitis deformans but failed to reveal definite arteriovenous fistulas. Results of special studies in one case demonstrated increased femoral venous pressure and increased femoral venous oxygen saturation in the involved lower extremity. Similar studies in another case showed no increase in the femoral venous pressure and only slight increase in femoral venous oxygen saturation in the extremity affected by osteitis deformans.

These data appear to indicate that multiple small arteriovenous fistulas probably are present in Paget's disease of bone. The symptoms and signs of osteitis deformans, the results of special vascular studies, and the pattern of the arteriograms probably are dependent largely on the degree of bony involvement produced by this disease.

3. Broadbent, J. C.; Clagett, O. T.; Burchell, H. B., and Wood, E. H.: Dye-Dilution Curves in Acyanotic Congenital Heart Disease, Am. J. Physiol. **167**: 770 (Dec.) 1951. Schreiner, G. E.; Freinkel, N.; Athens, J. W., and Stone, W. L., III: Dye Injection Curves in Traumatic Arterio-Venous Fistulae in Man, Fed. Proc. **11**: 141-142 (March) 1952. Wood, E. H.: Personal communication to the authors.

4. Edholm, O. G.; Howarth, S., and McMichael, J.: Heart Failure and Bone Blood Flow in Osteitis Deformans, Clin. Sc. **5**: 249-260 (Dec.) 1945.

Fatal Transfusion Reactions.—While the benefits of transfusion far outweigh the risk, there is a significant hazard in the administration of stored blood. The mortality from blood transfusion has been estimated to be as great as or greater than that from an appendectomy. The three outstanding dangers are homologous serum hepatitis, reactions due to incompatible blood, and bacterial contamination. . . . The occasional contamination of stored blood is inevitable, since it is impossible completely to sterilize the skin through which the phlebotomy needle is inserted, and since there is no effective method of sterilizing blood once drawn without damage to the blood. While earlier reports indicated more frequent contamination, an incidence of 1 to 3 per cent may be expected in modern blood banks. These studies are based on cultures of blood incubated at 37 or 32° C. Many organisms detected at these temperatures are either arrested or killed at the temperature of storage of blood (4 to 7° C.), and therefore rarely produce serious reactions. On the other hand, certain gram-negative bacilli do not grow at temperatures of 32° C. or above, but multiply freely at the storage temperature of blood. It is this group of organisms that have produced the most serious transfusion reactions.—A. R. Stevens Jr., M.D., and others, Fatal Transfusion Reactions from Contamination of Stored Blood by Cold Growing Bacteria, *Annals of Internal Medicine*, December, 1953.

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ISONIAZID THERAPY IN CUTANEOUS TUBERCULOSIS AND SARCOIDOSIS

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The rather unsatisfactory results of previous therapies in cutaneous tuberculosis led us to investigate the newer agents introduced for the treatment of this disease in other organs. Because tuberculoderms are uncommon, it is difficult to assemble individually any large series of such cases for an evaluation of their curative plans. Thus, for our guidance, we turned to the larger therapeutic studies done on the more prevalent pulmonary forms of this malady, and we selected isoniazid for trial. Since sarcoidosis presents clinical and histopathological findings similar to tuberculosis and since it is also difficult to handle, we included two cases of this somewhat rare entity in this study.

NEWER ANTITUBERCULOUS AGENTS

The recent Veterans Administration, Army, and Navy Conference on Chemotherapy in Tuberculosis [1] contributed much to our better understanding of the newer antituberculous agents. This group seems agreed that amithiozone (Tibione) [1a] is too toxic to warrant further employment. This is likewise true of iproniazid [1b,c] and viomycin,[1d] although some workers feel that the former drug may have a limited use in producing a more rapid therapeutic response in the desperately ill patient with far advanced pulmonary tuberculosis [1b] and that the latter agent, although possessing less antituberculous activity than streptomycin, may have some value in the treatment of the streptomycin-resistant phthisic patient.[1d]

A final evaluation of both pyrazinamide (Aldinamide), and candicidin is awaited. Although some observers contend that pyrazinamide may serve in preparing tuberculous patients for surgery,[1e] others believe that its early inducement of resistance [1b] may prevent a continuance of its use. Furthermore, the producers of candicidin are seeking a greater purification of their crude preparation, which may reduce its untoward reactions and permit its use as a highly effective agent against Candida and the other yeast-like organisms affecting the lungs.[1f]

Chlortetracycline (Aureomycin),[1a] oxytetracycline (Terramycin),[1a] and erythromycin [1g] seemingly do not produce severe toxic effects, but they also apparently have no destructive action on the Mycobacterium tuberculosis. Thus, the majority of the chest physicians have discarded them as antituberculous agents. Nevertheless, one investigator [1h] states that phthisic patients given streptomycin and oxytetracycline respond as well as those receiving streptomycin plus *p*-aminosalicylic acid and that the employment of the ordinary dose of 1 gm. of oxytetracycline daily is borne better than the usual 12 gm. of *p*-aminosalicylic acid daily. Therefore, he concludes that oxytetracycline can be substituted, without the loss of therapeutic effect, for persons who do not tolerate *p*-aminosalicylic acid.

Several new observations on *p*-aminosalicylic acid were recorded at the recent conference in Atlanta. A group of workers [1i] noted that the enteric-coated preparations of this drug were often passed in the stool and that this could account for certain treatment failures. Also it was reported that a solution of the sodium salt of *p*-aminosalicylic acid is therapeutically more effective than the granules or capsules of this medicament. Furthermore, a slight but definite increase in prothrombin time, without any change in coagulation time, was described in a small series of patients treated with *p*-aminosalicylic acid,[1j] but in another large group of patients who received this drug just prior to surgery, no abnormal bleeding tendency was observed. It was suggested, however, that the prothrombin time should be determined before any surgical procedure on any person receiving *p*-aminosalicylic acid and that vitamin K_1 should be given if the test is abnormal.[1j] In addition, it was demonstrated that *p*-aminosalicylic acid has some antithyroid activity, which was indicated by an early diminution in the iodine uptake by the thyroid gland and that may progress during the first month of treatment, but which thereafter remains stationary.[1k]

A review of the recent studies on streptomycin yielded some new data. In an attempt to improve this agent, a *p*-aminosalicylic acid salt of streptomycin was developed, but it had no more merit.[1a] In addition, there was a report on some brief experiences with the action of various streptomycyclamine derivatives of streptomycin.[1l] They found one compound (N'-n-octadecylamine of streptomycin) that had a fair degree of antitubercular activity but the other members of this group were either inferior to it, were neutral in action, or actually supported a growth of Myco. tuberculosis. In a large study to evaluate the comparative merits of streptomycin and dihydrostreptomycin, it was recorded that there is no difference in the therapeutic results obtained with either of these two preparations.[1m] However, because streptomycin tends to damage the vestibular apparatus and because dihydrostreptomycin tends to harm the auditory function, it seems advisable to alternate them in the injection series or to routinely use a preparation (Distrycin) containing equal parts of the two agents.[1n,o] Furthermore, this procedure may reduce other allergic phenomena that occur with greater frequency and severity with streptomycin. Also, a report on the tissue concentra-

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Read before the Section on Dermatology and Syphilology at the 102nd Annual Meeting of the American Medical Association, New York, June 2, 1953.

Much of the information on the newer antituberculous agents was obtained from the notes of Drs. J. W. Smith and J. G. Evans of the Lilly Research Division of Indianapolis General Hospital on the Veterans Administration, Army, and Navy Conference on Chemotherapy in Tuberculosis held at Atlanta, Ga., on Feb. 9 to 12, 1953.

tion of streptomycin [19] showed that there was as much as 0.5 mcg. per milliliter of tissue of the agent present in the lungs three days after the last injection in patients receiving 1 gm. of the drug daily.

In the continuing cooperative study of the Veterans Administration, Army, and Navy, which is aimed at finding the most effective treatment regimen for pulmonary tuberculosis, it has been agreed that a combination of biweekly intramuscular injections of 1 gm. of streptomycin or dihydrostreptomycin and daily oral administrations of 12 gm. of *p*-aminosalicylic acid, divided into four spaced 3 gm. doses is as effective as any of the regimens.[18] In one investigation [19] the accepted streptomycin schedule was simplified by use of 2 gm. doses of that agent once weekly, but this led to immediate bothersome side-effects of flushing and perioral paresthesias. In a limited study, another group [17] experimented with a single daily dose of 6 gm. of *p*-aminosalicylic acid to replace the giving of the four 3 gm. amounts of this drug, and they report a better toleration and equally good results from this modification.

HISTORY OF ISONIAZID AS ANTITUBERCULOUS DRUG

In 1912, two German chemists [2] were prompted to follow up the experiments of some earlier workers [3] and this resulted in the first production of isonicotinic acid hydrazide, which is now called isonicotinyl-hydrazine or isoniazid, the generic name adopted by the A. M. A. Council on Pharmacy and Chemistry. At that time it was merely an interesting, new, colorless, crystalline, small-molecular, water-soluble, pure, synthetic compound bearing a formula of $C_6H_7N_3O$ and having no known use.

Then in 1945 two Frenchmen [4] (E. Huant and V. Chorine) published separately reports on the antituberculous activity of nicotinamide. One of them (Chorine) concluded that this activity was not a vitamin result because he could not show the basic nicotinic acid to have tuberculostatic properties. Although the work of these men was forgotten, the action of nicotinamide against the tubercle bacillus was rediscovered by two Americans [4] (McKenzie and Kushner) in 1948, but they believed this was a vitamin effect because they found that only nicotinamide derivatives that jointly possessed vitamin and tuberculostatic activity showed this antituberculous quality. These particular studies were discontinued because none of the nicotinamide derivatives that they developed were as good or more effective than nicotinamide. Nevertheless, it did stimulate research with the pyridine carboxylic derivatives,[5] and this led to the eventual introduction of isoniazid as a drug that is cheap, orally administered, relatively atoxic, and tuberculostatic.[6] It is available under such trade names as Nydrazid, Rimifon, Dinacrin, and I. N. H.

IN VITRO STUDIES WITH ISONIAZID

In vitro experiments [7] with isoniazid have shown that, even in low concentrations, it has a specific and destructive effect on both extracellular and intracellular Myco. tuberculosis organisms, but it is ineffective against common gram-negative and gram-positive bacteria and only moderately active on small fungi.[8]

IN VIVO STUDIES WITH ISONIAZID IN ANIMALS

In vivo studies have demonstrated that isoniazid is effective in arresting or curing tuberculous processes in guinea pigs,[9] mice,[10] monkeys,[11] and rabbits [12]; that it is well tolerated by animals when given in proper amounts [13]; and that it is less toxic than other isomers of nicotinic acid.[14] However, large doses of the drug could produce toxic phenomena of anorexia, jaundice, weight loss, nervous excitement, tremors, ataxia, convulsion prostration, and death in acute respiratory failure.[15] In dogs, most of these reactions were reversible, and there was a definite relationship between plasma peaks and toxicity. High doses also led to changes in the red and white blood cell counts and the hemoglobin levels, but prolonged lower dosages of the drug caused no alterations in those blood elements.[15]

ISONIAZID THERAPY IN TUBERCULOSIS IN MAN

After extensive test tube and animal studies had proved that isoniazid possessed high antituberculous qualities and could safely be given to man, physicians began to use this drug in therapeutic studies on tuberculous patients. Since its advent, numerous reports have appeared on its administration in a wide variety of the forms of this disease with varying degrees of involvement.

Isoniazid in Pulmonary Tuberculosis.—The earliest clinical investigators [16] of isoniazid gave this drug alone to several patients with advanced and therapeutically unresponsive disease, and they observed x-ray, clinical, and laboratory improvements, consisting of lessened cough, lowered temperature, improved roentgenological findings, decreased Gaffky counts, some negative sputums, and increased weight. Also they observed no gastrointestinal irritation, allergic phenomena, or altered kidney, liver, or heart function. Furthermore, their subsequent reports [17] have continued to be favorable. Later,[18] another group found that this drug alone or with streptomycin produced better roentgenological clearing than did a combined streptomycin and *p*-aminosalicylic acid form of therapy, but they failed to note much difference between these three plans in the clinical or laboratory betterment of the patients. Likewise, other workers [19] in this field have recorded generally beneficial results.

However, certain skeptical voices have arisen, and a recent preliminary report [18] states that a three to five month schedule of therapy with streptomycin and *p*-aminosalicylic acid produces a better therapeutic result than a program of isoniazid alone or with streptomycin. Another group [20] found that in 33% of a series of 114 cases negative sputums developed following isoniazid treatment but over-all clinical improvement was apparent in only 10 to 11%. In some instances, the symptoms became severer during this treatment. Other workers [21] disagree with the earlier reports of betterment in the roentgenological, clinical, and laboratory findings and even believe [21a] that there is a higher relapse rate among isoniazid-treated patients. Some investigators feel that the drug's action is on the systemic toxicity rather than on the particular tuberculous lesion [22] and that any recorded increase in appetite is a nonspecific drug effect.[20] In all of these evaluations it has been cautioned

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that the continued values of bed rest, other supportive treatment, and the patient's own capacity to combat the infection not be forgotten.[19]

Isoniazid Therapy in Extrapulmonary Tuberculosis.—Furthermore, treatment with isoniazid has been beneficial in laryngeal,[23] otic,[23] gastrointestinal,[23] genitourinary,[24] tongue,[25] uveal,[26] meningeal,[27] and miliary forms [27b] of this disease. A recent group discussion [10,v,w] on the treatment of meningeal and miliary tuberculosis concluded that *p*-aminosalicylic acid and streptomycin is still the best combination for these manifestations, but it

Fig. 1.—Tuberculosis cutis luposa in a 34-year-old Negro housewife. *A*, on March 8, 1952, at institution of therapy. *B*, on May 7, 1953, after treatment with streptomycin, *p*-aminosalicylic acid, and isoniazid.

was admitted that isoniazid had been tried in too few cases to definitely exclude it from the therapy of those forms.

Isoniazid Therapy in Cutaneous Tuberculosis.—The first report [28] on the use of isoniazid therapy in cutaneous tuberculosis came from Bonn, Germany, where in several cases previously unresponsive patients with tuberculosis cutis of the luposa, verrucosa, colliquative, and papulonecrotica types attained good healing and no untoward reactions with oral administration of doses of from 5 to 10 mg. per kilogram of body weight per day of this drug. This publication was followed shortly by a report [29] in this country in which clinical healing was secured in one case of tuberculosis cutis luposa by giving dosages of 4 mg. per kilogram daily of the agent. Since that time one other similar article [30] has been published, and an earlier accepted preliminary observation by one of us (R. H.) [31] on the joint clinical and histopathological benefits obtained from this drug in a case of lupus vulgaris has appeared.

DOSE SIZE, TREATMENT SCHEDULES, AND DURATION FOR ISONIAZID THERAPY

To determine the proper isoniazid dosage for man, several laboratory animals (dogs, mice, and rats) were subjected to acute and chronic toxicity studies by several investigators.[32] From these experiments it was determined that the tolerated daily oral dose of isoniazid is related to the relative body surface areas of the different species. Thus, extension of their calculations to man indicated that amounts of 4 to 5 mg. per kilogram daily are safe for human beings. However, clinicians [17b] began by administering 2 mg. per kilogram daily, but this dosage was gradually increased to the presently recommended quantities of 3 to 5 mg. per kilogram daily.[33] The safety and efficacy of this schedule was predicted on the knowledge that the drug is absorbed readily from the alimentary tract,[34] penetrates quickly and widely into the tissues,[35a] is excreted rapidly by the kidney and bowel,[35b] and fails to accumulate unduly in the body.[24]

Lately, a cooperative study group [1] has recommended the use of 6 or more mg. per kilogram daily for better therapeutic results, and the literature shows that some clinicians [25] had already done this in small series of cases without untoward reactions. However, some investigators [18] insist that better responses occur with less than 5 mg. per kilogram daily.

To conduct a pure study,[36] early workers used isoniazid alone, but it was later reported [18] that the improvement was not maintained if isoniazid was used alone for longer than three months. Thus, an accumulated experience [37] indicated that a superior therapeutic effect was achieved only when the drug was used with streptomycin or *p*-aminosalicylic acid or both, although patients on these combined regimens may show a greater number of toxic reactions than those receiving isoniazid alone.[18] Therefore, for the present, the customary program is to use 3 to 5 mg. per kilogram daily of isoniazid orally plus 1 gm. biweekly of streptomycin or dihydrostreptomycin intramuscularly. Recently, a new preparation containing equal parts [18] of streptomycin and dihydrostreptomycin was introduced, and this may reduce the vestibular damage or auditory harm that may result from use of these two agents.

Finally there has been a preliminary report [17] on the use of radioactive isoniazid. One observer noted an accumulation of this special preparation in the lungs, skin, and caseous material of tuberculous lesions, but no elevated peak in the serum level. Another investigator believes that this substance cannot be metabolized by sensitive organisms and thus destroys those bacteria, whereas resistant organisms use the drug as a source of food.

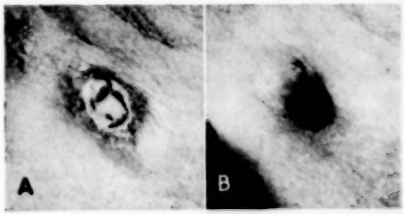

Fig. 2.—Tuberculosis cutis colliquativa in a 69-year-old woman. *A*, on Oct. 18, 1952, at time of first biopsy. *B*, on Jan. 23, 1953, after treatment with isoniazid and streptomycin.

It would seem that isoniazid can be given over indefinite but long periods with relative safety. However, there is no settled opinion on how long it should be given after the apparent healing of the active lesions.

REACTIONS AND CONTRAINDICATIONS TO ISONIAZID THERAPY

In an early report [16] on the use of isoniazid alone in pulmonary tuberculosis, reactions of mouth dryness, nausea, vomiting, constipation, hyper-reflexia, muscular twitchings, bladder flaccidity, vertigo, drowsiness, and

insomnia were noted, but these signs disappeared with continuance of therapy with the drug. Furthermore, they [16] observed mild eosinophilia and a slight decrease in hemoglobin levels, but they found these to be reversible. Another study [20] revealed elevated temperatures, increased sputum, worse chest lesions, and exudative reactions in some persons who were treated with this drug. Also, an increased coagulation time, without any change in the bleeding or the prothrombin time, and increased bleeding tendencies have been reported in

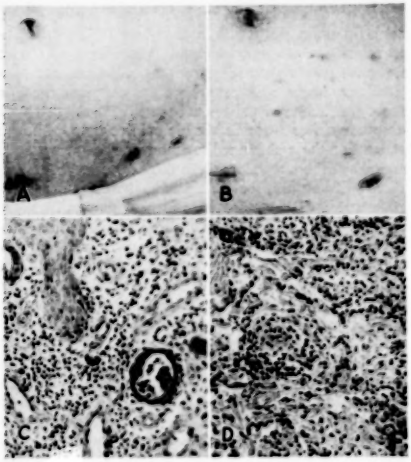

Fig. 3.—Tuberculosis cutis papulonecrotica in a 15-year-old white student. *A*, appearance on Dec. 6, 1952. *B*, lesions on May 7, 1953, after failure of treatment with isoniazid, streptomycin, and *p*-aminosalicylic acid. *C*, photomicrograph of biopsy specimen obtained Dec. 6, 1952. *D*, photomicrograph indicating failure of treatment on May 7, 1953.

some patients during isoniazid therapy.[38] Additional reactions of acute pellagra,[39] confusional psychoses,[40] aggravation of epileptic seizures,[41] and the possibility of toxic hepatitis [42] with jaundice have been recorded.

The only published dermatological manifestation [43] from this drug is a case of cutaneous sensitization developing in a pharmaceutical chemist who handled this drug. With this report it will behoove us to watch physicians, nurses, druggists, and others who have repeated contact with isoniazid.

No absolute contraindication to the existing isoniazid therapy has been observed, but severer reactions may be encountered with the newly recommended, increased doses of this drug. If any question arises, it would be well to decrease the dosage or discontinue administration of the drug in accordance with the severity or continuance of the sign. One group [44] believes that persons with marked central nervous system stimulation from the drug or epilepsy may be treated by concurrent oral administration of phenobarbital or pentobarbital if the toxic symptoms are acute. They [44] also caution against the use of central nervous system stimulants such as belladonna, ephedrine, or epinephrine in these particular cases. Also any poor appetite, such as existed in the reported case of pellagra, should be bolstered by vitamin B complex.[39] Another worker,[19] in the field of genitourinary tuberculosis, noted that higher blood levels of isoniazid may occur in patients with elevated blood urea levels, but that this is not a contraindication to the continuance of full doses of this drug.

ISONIAZID THERAPY AND DRUG RESISTANCE TO TUBERCLE BACILLI

When streptomycin-resistant organisms develop, then a combined regimen of isoniazid and *p*-aminosalicylic acid is reportedly superior to isoniazid alone [18] and the former drug is seemingly less effective than the latter agent in preventing the emergence of resistance to streptomycin.[13]

A resistance to isoniazid may appear rapidly [45] if this is used alone. This was seen in a recent study [46] of a series of cases of isoniazid-treated pulmonary tuberculosis in which bacillary resistance occurred in 11% by the end of the first month, in 52% by the end of the second month, and in 71% by the end of the third month. Furthermore, this arrested improvement [46] was shown in the repeated clinical and x-ray examinations.

These bad results can often be avoided by using isoniazid and streptomycin concurrently.[47] Also one

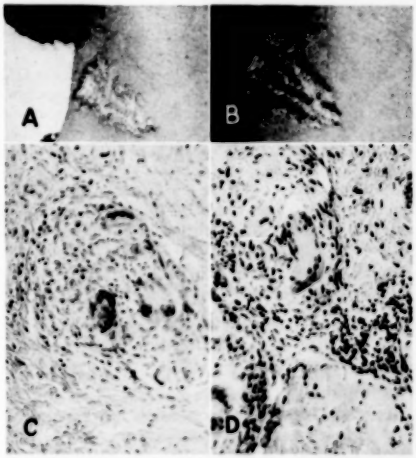

Fig. 4.—Sarcoidosis in a 37-year-old Negro woman. *A*, clinical appearance on Jan. 22, 1953. *B*, clinical appearance after treatment with isoniazid. *C*, photomicrograph of specimen obtained Dec. 23, 1952, on which diagnosis was based. *D*, photomicrograph showing lack of change in lesion with treatment.

group recently recommended an alternating schedule of isoniazid alone for one month, then streptomycin plus *p*-aminosalicylic acid for one month, then isoniazid alone for one month, and then streptomycin plus isoniazid for four months. With this regimen they did not find resistant organisms in any case.[18]

When isoniazid-resistant organisms emerge, the improvement in the patient's clinical condition usually re-

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mains stationary or further improves and less frequently relapses.[18] As an example of this, a recent study reported on 15 patients with avirulent, isoniazid-resistant organisms; in 13 cases the tuberculosis remained improved and in only 2 worsened. Furthermore,[18] although the bacilli are considered resistant, there may still be improvement with continued isoniazid therapy. However, the mortality rate [18] is higher in this group than in those whose organisms have remained sensitive to this drug.

It also seems that, when organisms become resistant to isoniazid, then they also become avirulent to guinea pigs and possibly to human beings. However, considerable discussion can be provoked on whether avirulence means death of the bacilli or whether the nonviable organism can again later regain its power of viability and reproduction under some undescribed change in their condition or environment.[19]

ISONIAZID THERAPY IN CUTANEOUS TUBERCULOSIS AND SARCOIDOSIS

The effect of isoniazid therapy was studied in eight cases of tuberculosis cutis, including three of luposa, one of colliquativa, two of papulonecrotica, and two of micropapular types of this disease and two additional cases of sarcoidosis. Prior to beginning of treatment for each patient a thorough history was obtained and physical examination done. Laboratory studies included a red blood cell count, a total and differential white blood cell count; a hemoglobin determination, a urinalysis, tuberculin reaction studies, a diagnostic roentgenogram of the chest, a roentgen study of the long bones, if indicated, a cutaneous biopsy, and a clinical photograph. During the period of their observation, each patient had frequent clinical examinations, periodic biopsy studies, and clinical photograph retakes. Thus, to conserve space, we will record only the pertinent history, the physical changes, the positive laboratory results, and the procedural variances in our reports of the individual cases. Moreover, owing to lack of space, the number of photographs is limited.

The routine treatment for all patients consisted of the oral administration of 4 mg. per kilogram daily of isoniazid. In some patients other antituberculous agents were added to this program, and the particular details of those modified regimens are given in the individual case records.

REPORTS OF CASES

CASE 1.—In 1926, a tall, slender, 34-year-old Negro housewife noted a single small cluster of diascopy-positive, asymptomatic, dull red, small papules of the left malar eminence. This persisted and gradually spread into a large, solid triangular patch, involving widely the left cheek, temple, and outer canthus of the eye and eventuating in a central scar with peripheral activity. Topical and vitamin D_2 therapy had failed. A positive tuberculin test and a biopsy on Sept. 5, 1946, confirmed our clinical diagnosis of tuberculosis cutis luposa.

On March 8, 1952, biweekly injections of 0.5 gm. of streptomycin were begun and a clinical photograph made (fig. 1*A*). On March 18 four daily oral doses of 22½ grains (1.5 gm.) each of *p*-aminosalicylic acid were added and these were gradually increased to 45 grains (3 gm.). Since these drugs failed to benefit, they were stopped, another biopsy specimen was obtained and routine isoniazid therapy was begun on April 30. Another biopsy on June 24 revealed a subsiding pathological process, and by Oct. 6 the process appeared to be clinically cured. However, the isoniazid therapy was continued regularly until Jan. 30, 1953, and then discontinued. After this stoppage of all treatment, the arrest has been maintained, as indicated by the clinical photograph (fig. 1*B*) of May 7. This case was reported in detail earlier.[21]

CASE 2.—In 1891, while still residing in his native Poland, the short, stocky patient, a 67-year-old white tailor, had an asymptomatic eruption on the left side of the face. It was diagnosed as lupus vulgaris and persistently extended to cover rather solidly the face, nose, ears, scalp and neck, with an intermittently active and scarring process containing diascopy-positive apple-jelly papules. A positive tuberculin test and a cutaneous biopsy of Sept. 13, 1952, confirmed the clinical diagnosis of tuberculosis cutis luposa. Between Oct. 17 and Nov. 21, 1952, he received biweekly injections of 1 gm. of dihydrostreptomycin. On the latter date, another biopsy was done and routine isoniazid therapy was started. This had been continued to the time of writing, and, although there had been marked improvement some clinical and histopathological activity remained.

CASE 3.—In 1944, the patient, a short, well-nourished, 44-year-old white housewife, had a small cluster of a few scattered, asymptomatic, pinkish, diascopy-positive, small papules of the left malar area. Because additional lesions continued to appear, she consulted her family physician, who did a biopsy that was reported as showing chronic dermatitis. A subsequent biopsy on Jan. 12, 1951, by a colleague in dermatology confirmed an impression of lupus vulgaris, but topical applications and vitamin D_2 therapy failed. In 1940 pulmonary tuberculosis was diagnosed and she was treated for pulmonary tuberculosis, and in 1942 that process was declared arrested. The positive Mantoux test and repeat biopsy on March 17, 1953, confirmed our impression of tuberculosis cutis luposa. A chest roentgenogram showed no tuberculous activity in the lungs. On March 19 routine isoniazid therapy was begun, and on March 26 biweekly injections of 1 gm. of dihydrostreptomycin were added, but on April 20 we replaced the latter drug with biweekly injections of 1 gm. of a combination of streptomycin and dihydrostreptomycin (Distreptocin) sulfate. She has had remarkable clearing.

CASE 4.—The patient was a small, slender, 69-year-old, white widowed housewife. About Aug. 20, 1952, an asymptomatic, nut-sized, doughy, indolent, subcutaneous tumor was discovered just above the center of the right clavicle. When the overlying skin became inflamed in a short time, her physician lanced the tumor and obtained only scanty serous fluid. Thereafter, this opening ulcerated; a seropurulent discharge appeared; thin blood surface crusts formed; and pallid granulations occurred at the base. On Sept. 23 a biopsy specimen showed a tuberculous picture with pseudoepitheliomatous hyperplasia and a tuberculin test was positive. Chest roentgenograms demonstrated old fibrotic calcifications in both apexes and the hilar regions of the lungs and a spot film showed an increased density in the right third rib posteriorly at its juncture with the transverse process. Iodopyracet (Diodrast) injected into the neck sinus anteriorly trickled back and down to puddle about the rib thickening posteriorly. A guinea pig inoculation was positive for tuberculosis. Thus, a diagnosis of tuberculosis cutis colliquativa was made.

On Oct. 18 an initial biopsy was done, and on Nov. 13 a clinical photograph (fig. 2*A*) was made. On Oct. 23 routine isoniazid (I. N. H.) therapy was undertaken, with daily injections of 1 gm. of streptomycin and a check photograph (fig. 2*B*) on Jan. 23, 1953, was made. In mid-March, 1953, the streptomycin injections were reduced to a biweekly schedule because of vertigo, and she has been continued on this modified program to date. On her return home in February, 1953, she passed from our direct care, and for that reason there are no check biopsies or later clinical photographs. However, we have kept in contact with her present physician, and he reports that the sinus was firmly healed by April, 1953.

CASE 5.—In mid-February, 1952, the patient, a medium-tall, moderately heavy, 15-year-old white student noted an asymptomatic eruption of pinkish, deep papules. The eruption progressed to central pustulation and necrotization and eventuated in small depressed scars with a pigmented halo, or some-

times in keloids. There was a simultaneous appearance of lesions over the trunk, buttock, extremities, and neck and a few on the face. A tuberculin test was strongly positive, and a section of the skin obtained on Dec. 6, 1952 (fig. 3C), was consistent with our clinical diagnosis of tuberculosis cutis papulonecrotica. A clinical photograph (fig. 3A) on Dec. 6 shows a picture similar to that on her admission. A subsequent consultation with her internist failed to divulge a tuberculous focus in this patient, and a full investigation of her family failed to show tuberculosis in any member.

On June 21 routine isoniazid therapy was begun, and on Sept. 27 biweekly injections of 1 gm. of streptomycin were added to the program. These therapies have been carried regularly to date, but new lesions continue to develop. Lately, although not reacting to streptomycin, she was changed to a combined program of isoniazid and *p*-aminosalicylic acid. This treatment failure is indicated in the clinical photograph (fig. 3B) and the photomicrograph (fig. 3D) of May 7, 1953.

CASE 6.—In August, 1952, this medium-tall, obese, 49-year-old white man had a sudden single outcropping of asymptomatic papulopustular lesions scattered over both lower extremities. These persisted and led to a central pustulation and necrosis with eventual centrally pitted scars, which had surrounding pigmentation. There was a history of chorioretinitis of unknown cause in 1947. A tuberculin test positivity and a suggestive tuberculous picture in the biopsy led a colleague in dermatology to make the clinical diagnosis of tuberculosis cutis papulonecrotica. On Nov. 22 routine isoniazid therapy was begun, with biweekly injections of 1 gm. of dihydrostreptomycin. On Jan. 23, 1953, the administration of dihydrostreptomycin was stopped, but the isoniazid was given alone for an additional month, when all medication was stopped. The process cleared, and no new lesions have appeared.

CASE 7.—In early 1946 a moderately tall, slender, 32-year-old white housewife noted asymptomatic, pinkish-yellow, barely elevated, very small papules. They were scattered and grouped about the forehead, cheeks, chin and upper neck, and led to minute depressed scars. Other physicians had treated this as a contact or food allergy, and she complained of considerable nervousness for which she had earlier taken sedatives. On Feb. 2, 1948, a biopsy showed only one small area of epithelioid reaction, and the tuberculin test was only slightly positive. After consultation with a dermatologist, a diagnosis of micropapular tuberculid was made. Between Feb. 7, 1948, and Dec. 2, 1952, she received fairly continuous vitamin D_2 therapy, and the lesions improved but never cleared. On Dec. 2 routine isoniazid therapy alone was begun, and this has been continued to date. Early in the treatment the response was slow, but later the process showed definite clinical improvement; she refused a check biopsy.

CASE 8.—In early 1950, a moderately tall, moderately heavy, 35-year-old white housewife had pruritic, erythematous, small, deep papules in the lateral portions of both cheeks. Earlier she had had acne vulgaris, and she still complained of an occasional pimple. Of herself, she had used several topical proprietaries, but she admitted no drug ingestion. A chest roentgenogram showed several calcified right hilar nodes, a midright lung Ghon complex, and marked right base bronchovascular markings. A tuberculin test was moderately positive. A biopsy specimen on Jan. 1, 1951, was compatible with micropapular tuberculid, and we made a clinical diagnosis of the same entity. Between Feb. 7 and Dec. 15, 1952, she received rather continuous vitamin D_2 therapy with moderate improvement, but the discomforts of a pregnancy temporarily interrupted her treatment and observation. However, she returned with a flare-up on March 23, 1953, and routine isoniazid therapy alone was begun, which has been continued to date. She was essentially free of her eruption when last seen, but she refused a check biopsy.

CASE 9.—From Aug. 1, 1952, to the time of writing, a tall, slender, 31-year-old white housewife had had six asymptomatic lesions of the forehead and cheeks. They were split-pea-sized, pinkish-yellow-brown solid lesions that were elevated peripherally. Her tuberculin test was negative, and roentgenological studies of the chest and long bones revealed no abnormalities. A biopsy performed on Feb. 3, 1953, confirmed our clinical diagnosis of sarcoidosis. On Feb. 24, 1953, routine isoniazid therapy alone was begun and has been continued to date. No clinical improvement had occurred by May 11.

CASE 10.—On Aug. 25, 1952, a medium-tall, slender, alert, 37-year-old Negro housewife entered our tuberculosis division. She had had a dry cough for two years, fatigue for 1½ years, a skin eruption for one year, voice huskiness and dyspnea for six months, a weight loss for three months, and recurrent hemoptysis for 10 days. After admission she failed to bleed further and the physical chest signs cleared promptly, but the huskiness, dyspnea and skin eruption persisted. Her skin eruption consisted of dull-red, firm, single or grouped papules about the nares, nose angles, and eyelids; there were patchy or linear arrangements about the right forehead, the left mandibular area, the right elbow extensor, and the posterior right side and anterior neck. A laryngoscopic examination revealed thickening of the left vocal cord and ulcerations of the epiglottis, the aryepiglottic folds, and the arytenoid cartilage. Results of tuberculin tests with increased concentrations, sputum examinations, a histoplasmin test, and blood serologic studies were all negative. Repeated chest roentgenograms were interpreted as showing tuberculosis, but on a later review these were adjudged compatible with atypical sarcoidosis. The microscopic examination of laryngeal tissue lay between tuberculosis and sarcoidosis, but a cutaneous biopsy specimen (fig. 4C) on Dec. 23 was consistent with the latter. Thus, in considering all findings, a diagnosis of sarcoidosis was made. On Jan. 22, 1953, a clinical photograph (fig. 4A) was made. On Jan. 5 routine isoniazid therapy was started alone, and this has been continued to date. Although a clinical photograph (fig. 4B) and a photomicrograph (fig. 4D) on May 11 showed the skin eruption to be unaltered, the consulting chest physician believed the lung picture looked better, although he added that this may sometimes be a transitory phase in this disease.

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SUMMARY

In the true tuberculoderms, two patients (cases 1 and 3) with tuberculosis cutis luposa and one patient (case 4) with tuberculosis cutis colliquativa obtained excellent therapeutic results with isoniazid administered alone or in combination with streptomycin or dihydrostreptomycin. However, another patient (case 2) with tuberculosis cutis luposa showed only a good but incomplete response to isoniazid and dihydrostreptomycin, but we believe that his marked residual scarring would have slowed the penetration of any chemotherapeutic agent.

In the last two cases of tuberculosis cutis papulonecrotica, one patient (case 6) had prompt and complete disappearance of his lesions with isoniazid plus dihydrostreptomycin and the lesions have remained clear after discontinuance of therapy. The condition of the other patient (case 5) has worsened during treatment with isoniazid combined with streptomycin and *p*-aminosalicylic acid. However, it is possible that the former patient, a middle-aged man, was more careful of his rest and general living than the latter patient, a high school girl. In the two cases of micropapular tuberculid (cases 7 and 8), both patients showed a slow response to isoniazid therapy alone but when last seen they were showing definite signs of improvement and the skin of one of them is essentially clear (case 8). In the two cases of sarcoidosis (cases 9 and 10), there was no cutaneous improvement after administration of isoniazid alone. However, the pulmonary clearing reported by the consultant in case 10 is yet to be fully evaluated.

We feel that all reported progress should be checked by both clinical and histopathological studies. Our much too limited study seemed to indicate that one can expect a faster and better therapeutic result with isoniazid in

the true tuberculoderms than in the tuberculids. This is not a rigid statement, however, and we ask other workers to check on this preliminary observation.

Our limited study showed no untoward reactions ascribable to isoniazid and an ordinarily prompt therapeutic response, when used in oral doses of 4 mg. per kilogram of body weight per day, but we regret the vestibular damage produced by streptomycin in case 4. Furthermore, it would seem that this drug can be employed over indefinitely long periods. One must watch for isoniazid resistance, however, although no relapse occurred in our series after the condition of a patient had once cleared. It is now agreed that this agent is best used in combination with streptomycin or dihydrostreptomycin or a combination of streptomycin and dihydrostreptomycin (Distreptocin) sulfate and possibly *p*-aminosalicylic acid, and we do recommend the further trial of this drug in combination for cutaneous tuberculosis and sarcoidosis.

Locke and 10th St. (Dr. Dalton).

NEWER APPROACHES TO THE STUDY OF HEMOPHILIA AND HEMOPHILIOID STATES

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Recent studies have shown that hemophilia, even if severe and classical in type, may be easily confused with other hemorrhagic states. Severe hemorrhagic manifestations, including repeated hemarthroses, a family history suggesting a sex-linked recessive inheritance, and laboratory findings, such as a long clotting time, normal prothrombin time, and delayed prothrombin utilization, may all be present; yet the disease may not be true hemophilia. On the other hand, it has been shown that hemophilia may be so mild that the diagnostic procedures in common use are inadequate for diagnosis.

In the last few years many cases of hemophilia-like disease, different from either the severe or mild forms of hemophilia, have been described. As in hemophilia, there is a bleeding tendency from childhood, and often there are other bleeders in the family. The clotting defects shown by these patients are of several different types. They resemble hemophilia in that there is ineffectual conversion of prothrombin to thrombin. At least four distinct hemophilia-like hemorrhagic diseases, apparently due to a deficiency of one of four separate plasma clotting factors, have been described. These diseases form a group that we term the hemophilioid states. In this paper two new methods for the diagnosis of hemophilia are considered along with a simple procedure for the differentiation of hemophilia and the various hemophilioid states.

METHODS

The two new methods for the diagnosis of hemophilia are (1) the partial thromboplastin time (PTT) and (2) a simplified antihemophilic factor (AHF) assay procedure. The partial thromboplastin time [1] is performed at 37 C by mixing 0.1 ml. of oxalated plasma, 0.1 ml. of partial thromboplastin (either crude cephalin or Asolectin [2]), and 0.1 ml. of 0.02 M calcium chloride, in the order named. The concentration of partial thromboplastin is adjusted by dilution to give a clotting time in the range of 40 to 80 seconds; 0.3% suspension is usually satisfactory.

The AHF assay has been described in detail by Langdell, Wagner, and Brinkhous.[3] Results are expressed in per cent of normal. The 100% value is that of a carefully selected person whose AHF activity is about that of the mean of a larger group of normal adults. The prothrombin time and the two prothrombin utilization (or consumption) methods have been described previously.[3] Clotting times were done by the two tube Lee-White method. Bleeding times were performed by Ivy's method.

PATIENTS WITH HEMOPHILIA AND SUBHEMOPHILIA

The use of the two new laboratory procedures, the partial thromboplastin time and the AHF assay is illustrated in three cases of hemophilia of different degrees of severity. Included in the study is a "normal" subject who had one episode of abnormal bleeding postoperatively. This subject is representative of a group we have called subhemophilia, which will be considered below.

Classical Hemophilia.—A 28-year-old taxi driver (T. W. T.) bruised easily all his life. He had "arthritis" for many years. Hemarthroses occurred in many joints, and the right knee was immobile. Severe internal hemorrhage five years prior to our study required numerous transfusions. He had two brothers, both of whom were "bleeders," five normal sisters, and one normal son. During childhood he was told he had hemophilia.

Moderate Hemophilia.—A 69-year-old retired college professor (H. A. D.) had frequent bruises and occasional large hematomas all his life. At the age of 8 he bled for several days after a sling shot injury to the forehead. As a college baseball player, at the age of 25, he injured his

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Dr. Jessica H. Lewis, Chapel Hill, N. C., arranged for our study of patients D. H. and R. S., and Drs. R. W. Coons and R. L. Rosenthal, New York, arranged for the study of patients V. M and B. Y., respectively.

1. Langdell, R. D.; Wagner, R. H., and Brinkhous, K. M.: Effect of Ant hemoph lic Factor on One-Stage Clott ng Tests, J. Lab. & Clin. Med. 41: 637 (April) 1953.

2. This product is a commercial phosphatide preparation made from crude soya lecithin by Associated Concentrates.

3. Langdell, R. D.; Graham, J. B., and Brinkhous, K. M.: Prothrombin Utilization During Clotting: Comparison of Results with 2-Stage and 1-Stage Methods, Proc. Soc. Exper. Biol. & Med. 74: 424 (June) 1950.

left hip during play and had recurrent swelling and pain at the age of 45. At the age of 57 he bled for 10 days from the operative wound after hemorrhoidectomy. After tooth extractions, he always bled for several days. He was told on two occasions during the past 15 years, after blood studies, that he had vascular purpura. He had no transfusions. No other members of the family were similarly affected.

Mild Hemophilia.—An 18-year-old college student (V. McF.) bruised easily all his life. After tonsillectomy at the age of 5 and after a fall at the age of 6 in which two teeth were knocked out, he bled for many days and was given blood transfusions on both occasions. At the age of 9 he was hospitalized for one week because of bleeding after a tooth extraction. He was given one transfusion. There were no hemarthroses. The patient played basketball regularly in high school and college. The family history was reported elsewhere.[4]

Subhemophilia.—A 22-year-old male college student (W. McL.) was always in good health. At the age of 16 after circumcision, he had a slow ooze from the operative wound for nearly a week.

The AHF assay revealed none of this clotting factor in the patient with classical hemophilia; a trace of AHF was found in the patient with moderate hemophilia; and 16% of AHF was found in the patient with mild hemophilia. In the patient with subhemophilia who had had a single bleeding episode, the AHF was 33% of normal. It will be observed that there is a good correlation between the plasma AHF levels and the severity of the bleeding diathesis. The partial thromboplastin time was prolonged in patients with severe and moderate hemophilia but was normal in patients with mild hemophilia and the subhemophilia. These results were to be expected, since Langdell and associates [1] have shown that the partial thromboplastin time is normal when the plasma AHF content is at least 15%. In contrast to these results, the clotting time and prothrombin utilization tests were abnormal only in the patient with classical hemophilia. These methods appear to be less sensitive than the partial thromboplastin time in detecting a clotting defect of moderate severity.

The finding of a person with an AHF level of 33% led to the determination of plasma AHF in a large number of normal adults. Results of one such study on 47 normal subjects are shown in figure 1. AHF values are given as the nearest 10% figure. Over a threefold difference from the lowest to the highest value (50 to 170%) was observed. Periodic determination of AHF levels in the same persons showed that the antihemophilic activity of plasma remains remarkably constant and appears to be characteristic of the individual person. In the survey of normal persons, no other subjects with AHF below 50% were found; however, in a family previously reported,[4] there were seven persons, one male and six females, with AHF levels in the range of 30 to 45%. It was found that 63% of the persons in the 30-45% range had bled excessively after operative procedures. The operative procedures included cesarean section, hysterectomy, tonsillectomy, oviduct ligation, and uterine curettage. All except two patients had occasional epistaxis and bruised easily. The bleeding from wounds was a slow ooze, and the rebleeding phenomenon occurred. From the data at hand, it appears that with stress to the hemostatic mechanism still lower AHF levels may develop in persons with low AHF levels and they become temporary bleeders. For this reason we have designated this group as subhemophilia.

TABLE 1.—*Comparison of Antihemophilic Factor (AHF) Levels with Other Clotting Tests in Hemophilia and Subhemophilia*

Patient	Diagnosis	Plasma AHF, %	Clotting Time, Min.	Bleeding Time, Min.	Prothrombin Time, Sec.	Partial Thromboplastin Time, Sec.	Prothrombin Utilization Test: Residual Prothrombin, % After 30 Min. One Stage	After 30 Min. Two Stage	After 60 Min. One Stage	After 60 Min. Two Stage
T. W. T.	Classical hemophilia	0	>60	5	12	210	150	100	146	96
H. A. D.	Moderate hemophilia	<3	12	5	12	180	85	21	15	<3
V. McF.	Mild hemophilia	16	9	3½	12	70	95	45	21	<3
W. McL.	Subhemophilia	33	8.5	5	12	68	84	44	18	<3
J. B. C.	Normal	100	8.5	5	12	76	88	34	19	<3

CLOTTING TESTS IN HEMOPHILIA

Clotting tests on the patients with hemophilia or subhemophilia are given in table 1. These patients were selected to illustrate (1) the variation in plasma AHF levels in different patients with hemophilia, and (2) the relationship between AHF levels and other laboratory tests.

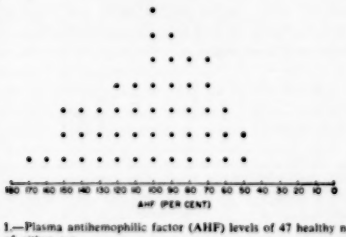

Fig. 1.—Plasma antihemophilic factor (AHF) levels of 47 healthy normal adults of either sex.

HEMOPHILIOID STATES

Several hemophilia-like hemorrhagic diatheses have been recognized in the past six years. A variety of terms has been used to designate this group of congenital bleeders. Among the terms used are parahemophilia, Owren's disease, Ac-globulin deficiency, labile factor deficiency, factor 5 deficiency, congenital deficiency of

4. Graham, J. B.; McLendon, W. W., and Brinkhous, K. M.: Mild Hemophilia: An Allelic Form of the Disease, Am. J. M. Sc. 225:46 (Jan.) 1953.

proaccelerin, serum prothrombin conversion accelerator (spca) deficiency, congenital hypoproconvertinemia, Christmas disease, plasma thromboplastin component (PTC) deficiency, plasma thromboplastin antecedent (PTA) deficiency, or merely a special form of hemorrhagic diathesis. There appear to be at least three, and probably four, separate clotting factors concerned in these congenital deficiencies. Much disagreement exists among workers in the field of blood clotting regarding the mechanism by which these various new clotting factors contribute to physiological thrombin formation. The varied nomenclature is in part a result of different theories that have been propounded in recent times regarding the sequence of events in the early phases of blood clotting. Until critical data are available to determine the exact biochemical reactions in which each of these factors participate, the use of a nonspecific terminology for this group of deficiency states is proposed. This terminology, along with the deficient plasma factor, is indicated in table 2. Hemophilia, because of its clinical and pathological similarity to these diseases, is included. Revisions of the list can be made as new facts are established. A brief summary of the more pertinent charateristics of these newly recognized hemorrhagic diseases is given below. A clinical abstract illustrates each type of disease.

Hemophilioid State A (Parahemophilia).—Parahemophilia was first clearly described by Owren in 1947.[5] Since then at least 16 well-documented cases have been reported. Epistaxis and dermal ecchymoses, without hemarthroses, are the most frequent hemorrhagic manifestations. Either sex may be involved. Laboratory data indicate that bleeding time, clot retraction and platelet counts are within the limits of normal. The clotting time may be prolonged to 30 or 60 minutes (normal 9 to 12 minutes). The prothrombin time is long, but plasma prothrombin levels determined by the modified two stage procedure are normal. Prothrombin consumption tests show slow utilization of prothrombin in clotting blood. The factor in normal plasma that corrects the deficiency is a globulin, since it is precipitated between 25 and 50% saturation with ammonium sulfate. It is not adsorbed onto barium sulfate and disappears rapidly on aging of plasma. The disease may occur sporadically but usually there is a positive family history, with occurrence of a similar bleeding tendency in siblings, one parent, aunts, uncles, cousins, or more distantly related relatives.

The patient (D. H.), a 3-year-old girl, appeared well until 6 months old, when a hematoma developed at the site of a needle puncture wound. Later, after a fall in which she bit her tongue, bleeding and a severe hematoma developed. Blood transfusions were followed by prompt hemostasis. There were no known bleeders in the family. Prothrombin (two stage method) was 105%, and the AHF value was 78%.

Hemophilioid State B.—The hemorrhagic diathesis, hemophilioid state B, was described by Alexander and co-workers in 1951.[6] Only four other cases have been reported since then, aside from the case referred to below. Epistaxis and dermal ecchymoses are the most common hemorrhagic manifestations. Hematuria, melena, and hemarthrosis have also been described. The clotting time may be somewhat prolonged; the highest value reported is 20 minutes. In the severest case prothrombin utilization was impaired. The prothrombin time is prolonged, but prothrombin determined by a modified two-stage procedure is normal. The factor that corrects this defect is removed from normal plasma by the common adsorbents for prothrombin, including barium sulfate. The plasma factor is thought to be converted to an active form (e. g., serum prothrombin conversion accelerator) during clotting. It occurs in both sexes and in siblings. The mother may be affected.

The patient (R. S.), a 32-year-old man, had had bleeding episodes since birth. There was excessive bleeding for two days from the ligated umbilical cord. There were repeated episodes of epistaxis, hematuria, and melena. Subcutaneous hemorrhages were frequent. His joints were swollen (hemarthrosis?). Other relatives were subject to free bleeding, but were not tested. The clotting time was 20 minutes. Prothrombin (two stage method) was 100%, and AHF was 180%. The prothrombin utilization test (two stage) was normal.

TABLE 2.—*Hemophilia and Hemophilioid States, with Associated Clotting Factor Deficiency*

Hemorrhagic Disease	Deficient Factor	Probable Synonyms for Deficient Factor
Hemophilia	Antihemophilic factor (AHF)	Antihemophilic globulin (AHG) Thromboplastinogen Thromboplastic plasma component (TPC)
Hemophilioid state A	Accelerator globulin (AcG)	Labile factor Factor 5 Accelerin
Hemophilioid state B	Serum accelerator factor (SAF)	Serum prothrombin conversion accelerator (spca) Convertin Factor 7 Stable factor Co-thromboplastin (Mann)
Hemophilioid state C	Plasma thromboplastin component (PTC)	Christmas factor
Hemophilioid state D	Plasma thromboplastin antecedent (PTA)	

Hemophilioid State C.—Aggeler and associates carefully studied hemophilioid state C in 1952.[7] Fourteen additional cases have been reported in the last year. The commonest hemorrhagic manifestations are epistaxis, dermal ecchymoses, and hemarthroses. The bleeding time and clot retraction tests and platelet counts are within normal limits. The clotting time is prolonged; it may be delayed for only a few minutes or for several hours. Plasma prothrombin is normal and the prothrombin time is normal. The factor in normal plasma that corrects the defect is adsorbed along with prothrombin onto many adsorbents, including barium sulfate. The factor is precipitated by 45 to 50% saturation of normal plasma with

5. Owren, P. A.: Parahaemophilia: Haemorrhagic Diathesis Due to Absence of a Previously Unknown Clotting Factor, Lancet **1**: 446 (April 5) 1947.

6. Alexander, B.; Goldstein, R.; Landwehr, G., and Cook, C. D.: Congenital SPCA Deficiency: Hitherto Unrecognized Coagulation Defect with Hemorrhage Rectified by Serum and Serum Fractions, J. Clin. Invest. **30**: 596 (June) 1951.

7. Aggeler, P. M., and others: Plasma Thromboplastin Component (PTC) Deficiency: New Disease Resembling Hemophilia, Proc. Soc. Exper. Biol. & Med. **79**: 692 (April) 1952. Lewis, J. H., and Ferguson, J. H.: Hemorrhagic Diathesis due to PTC (Plasma Thromboplastin Component) Deficiency, Proc. Soc. Exper. Biol. & Med. **82**: 445 (March) 1953.

ammonium sulfate. The disease has been described only in males, except for the patient indicated below. Most cases have occurred in families in which the transmission appears to be sex-linked, as in hemophilia.[7] Several sporadic cases have been described.

The patient (V. M.), a 49-year-old housewife, had had a bleeding tendency since childhood. She bruised easily throughout childhood, and epistaxes were frequent. Tonsillectomy during childhood was not followed by excessive bleeding; however, uterine bleeding was excessive after each of three deliveries. Excessive bleeding also occurred after tooth extractions. In 1953, after a thyroidectomy, there was extensive postoperative hemorrhage that was controlled by blood transfusions. Two sons were bleeders; one had repeated hemarthroses and was crippled. The clotting time was 12 minutes. The

Fig. 2.—Prothrombin times and partial thromboplastin times on oxalated plasmas of patients with hemophilia or a hemophilioid disease: (1) standard clotting tests with 0.1 ml. plasma, 0.1 ml. thromboplastin, and 0.1 ml. of 0.02 M calcium chloride were used; (2) 0.1 ml. of plasma mixture consisting of equal parts, as indicated, used in the standard clotting tests; and (3) 0.1 ml. of plasma mixture consisting of equal parts of plasma indicated and barium-sulfate-treated normal plasma, used in the standard clotting tests.

prothrombin (two stage) was 100%, and AHF was 93%. Prothrombin utilization was impaired, with 56% prothrombin remaining in the serum at two hours.

Hemophilioid State D.—Only three cases of hemophilioid state D have been described, all by Rosenthal in 1953.[8] Excessive bleeding after tooth extraction is the commonest hemorrhagic manifestation. Prothrombin levels by the two stage method, prothrombin time, bleeding time, clot retraction and platelet count are all normal. The clotting time is somewhat prolonged (15 to 29 minutes). The prothrombin consumption test is prolonged.

8. Rosenthal, R. L.; Dreskin, O. H., and Rosenthal, N.: New Hemophilia-Like Disease Caused by Deficiency of a Third Plasma Thromboplastin Factor, Proc. Soc. Exper. Biol. & Med. 82: 171 (Jan.) 1953.

The corrective factor in normal plasma appears to be adsorbed onto barium sulfate. The three patients described have been in one family—a man and his two nieces.

The patient (B. Y.), a 29-year-old housewife, had had a mild bleeding tendency since childhood. It was observed particularly after tooth extractions. The family history, as well as other data on this patient, was described earlier by Rosenthal.[8] The clotting time was 15 minutes. Prothrombin (two stage) was 96% of normal, and AHF was 142%.

CLOTTING TESTS IN THE HEMOPHILIOID STATES

In general, the recognition of the various members of the hemophilioid group as separate hemorrhagic states has been dependent on extensive laboratory studies of the blood. These studies included negative findings, such as normal fibrinogen, prothrombin, clotting inhibitor, and platelet numbers, coupled with the positive finding of delayed conversion of prothrombin to thrombin. The latter was indicated by (1) a long prothrombin time, in which the plasma clotted relatively slowly in spite of normal prothrombin levels and the presence of potent thromboplastin, (2) slow disappearance of prothrombin from clotting blood in prothrombin utilization or consumption tests, or (3) slow evolution of thrombin in the two stage prothrombin assay. Further localization of the clotting defect was dependent on special studies. In the main these consisted in determining the effectiveness of normal plasma and serum fractions, and of plasmas with known deficiencies, on the clotting defect under study. Clear-cut corrective or noncorrective action helped to categorize the nature of the hemorrhagic diathesis.

An effort was made to find a pattern of simple tests by which each disease in the hemophilia-hemophilioid group could be identified. Comparative clotting studies were done on the four patients mentioned above, each with a different hemophilioid state, and on the classical hemophiliac (T. W. T.). The clotting studies consisted of prothrombin time and partial thromboplastin time determinations. The results are shown in figure 2. In section 1 of the figure it will be noted that the partial thromboplastin time is prolonged in all five of the patients in this group, whereas the prothrombin time is prolonged in only hemophilioid states A and B. In section 2 of the figure it is seen that, on mixing pairs of plasmas in all combinations, the prolonged clotting times noted in section 1 of the figure become normal. The mutually corrective action on the clotting defect of these plasmas strongly supports the idea that each of the patients had a deficiency of a separate clotting factor. In section 3 of the figure are given the results of the two clotting tests after adding to the patient's plasma, normal plasma adsorbed with barium sulfate. The adsorbed plasma contains three important clotting factors, fibrinogen, AHF, and the factor missing in hemophilioid state A, but it lacks prothrombin and the three factors missing in hemophilioid states B, C, and D. As would be expected, the partial thromboplastin time becomes normal in hemophilia and hemophilioid state A after fortification of the patient's plasma with barium-sulfate-treated normal plasma but remains unchanged in hemophilioid states

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B, C, and D. The prolonged prothrombin time after fortification becomes normal in hemophilioid state A but not in state B.

PROCEDURE FOR DIAGNOSIS

The data presented in figure 2 provide the basis of a relatively simple schema for differentiating the bleeding diatheses that belong to the hemophilia and hemophilioid group. The procedure consists basically of two tests, the partial thromboplastin time and the prothrombin time. Each test is done on the patient's plasma alone, as well as on the patient's plasma fortified with equal volumes of fresh normal barium-sulfate-treated plasma. Table 3 shows the distribution of results with this group of patients. The patients fall into four main groups: (1) hemophilia, (2) hemophilioid state A, (3) hemophilioid state B, and (4) hemophilioid states C and D. The latter two states are not differentiated in this procedure.

This procedure has the limitation that mild deficiencies may not be detected. Thus, in very mild hemophilia, all of the tests are negative. In mild cases, more complicated tests designed to quantify the degree of the clotting factor deficiency are necessary. Also, in the differentiation of the various disease states, this procedure may not be adequate; for example, a two stage prothrombin determination, made after addition of the B factor, is needed to distinguish hemophilioid state B from hypoprothrombinemia. In case the plasma fits into the fourth category, either type C or type D hemophilioid state may be present. A presumptive diagnosis may be made by doing partial thromboplastin times on the patient's plasma after mixing with known type C and type D plasmas, instead of with barium-sulfate-adsorbed plasmas.

INHERITANCE OF HEMOPHILIA AND HEMOPHILIOID STATES

The inheritance of hemophilia is the best understood of this group of hemorrhagic diseases. Classical hemophilia was one of the first diseases to be recognized in modern times as being inherited as a sex-linked recessive characteristic. With rare exceptions, the disease is seen only in males. Genetic theory attributes the disease in the male to the presence of the recessive gene *h* on the unpaired portion of X-chromosome. The normal male has the dominant gene *H* in the same chromosomal locus. It is thus assumed that with the gene *H* the body is able to produce normal amounts of plasma AHF, but with the gene *h* this ability is lost. In the female conductors, both genes *H* and *h* are present, one on each of the X-chromosomes; these heterozygotes have normal plasma AHF levels.

In hemophilia, there are five possible crosses: (1) heterozygous female (X^HX^h) and normal male (X^HY), the usual cross in hemophilia; (2) normal female (X^HX^H) and hemophilic male (X^hY), an increasingly frequent cross as more hemophiliacs reach maturity; (3) heterozygous female (X^HX^h) and hemophilic male (X^hY), an extremely rare cross in human genetics, and from which a hemophilic female may issue; (4) hemophiliac female (X^hX^h) and normal male (X^HY); and (5) hemophilic female (X^hX^h) and hemophilic male (X^hY). Only in canine hemophilia have all of the possible crosses been tested.[9] All of the combinations gave progeny exactly as the theory of sex-linked inheritance predicts, including the above-mentioned cross 4, which has not yet been reported in detail.

The study of families with either mild hemophilia or the subhemophiliac trait has added to the knowledge of the inheritance of this disease. In one family with the mildest form of hemophilia,[4] the affected males rarely bled excessively, and their plasma AHF level was in the range of 12 to 22%. The constancy of the disease and the AHF levels in the affected individuals led to the postulation that they had an allelomorphic form of hemophilia, due to an allele h^m, distinct from *h*, which is responsible for classical hemophilia. The allele h^m, then, permits production of AHF, but not in amounts sufficient for effective hemostasis.

In the case of the subhemophiliac (W. M.), his four siblings had AHF levels in the narrow range of 57 to 69%. This is in marked contrast to the spread in AHF levels in a group of randomly selected normal adults (fig. 1). Similar results were found in other families in which various members had roughly the same AHF levels. It appears that there may be a series of isoalleles,

TABLE 3.—*Schema for Differentiation of Hemophilia and Hemophilioid States*

Presumptive Diagnosis	Prothrombin Time		Partial Thromboplastin Time	
	Plasma	Fortified Plasma*	Plasma	Fortified Plasma*
Hemophilia	Normal	Normal	Prolonged	Normal
Hemophilioid state A	Prolonged	Normal	Prolonged	Normal
Hemophilioid state B	Prolonged	Prolonged	Prolonged	Prolonged
Hemophilioid state C or D	Normal	Normal	Prolonged	Prolonged

* Prior to the test the patient's plasma was mixed with equal parts of fresh normal plasma treated with barium sulfate.

H, *H'*, *H''*, . . ., each one of which is associated with a characteristic level of plasma AHF. This series of alleles may be a continuous one, and would account for the range of normal AHF levels, as well as the AHF levels characteristic of subhemophilia, mild hemophilia and the more severe forms of the disease. The series may be represented as *H*, *H'*, *H''*, . . ., $h^{m'}$, h^m, *h*.

The clear recognition of the hemophilioid states has been relatively recent, and genetic studies in most cases are fragmentary. In hemophilioid state A, the disease has been observed in both sexes and has been transmitted by both sexes, either affected or unaffected. While the transmission appears to be autosomal in type, it is not clear if it is recessive or dominant with variable penetrance.[10] In hemophilioid state B the disease occurs in both sexes. In the two families best studied, transmission through an affected mother suggests that it may be an autosomal dominant. The inheritance of hemophilioid state C is very similar to that in true hemophilia.

9. Brinkhous, K. M.; Graham, J. B.; Penick, G. D., and Langdell, R. D.: Studies on Canine Hemophilia, Transactions of Fourth Conference on Blood Clotting and Allied Problems, New York, Josiah Macy, Jr. Foundation, 1951, p. 51.

10. Brink, A. J., and Kingsley, C. S.: A Familial Disorder of Blood Coagulation Due to Deficiency of the Labile Factor, Quart. J. Med. 45: 19 (Jan.) 1952.

All of the cases have been in males, except for one in the woman who was reported on in this paper. This patient may be a homozygote or a heterozygote with a high degree of expressivity of the affected gene. Koller and associates [11] have reported a family that appears to belong to this category. While only males had the disease, several mothers of the patients had a minimal clotting defect as determined by the prothrombin consumption test. This suggests that although the disease is sex-linked, the clotting defect may be manifest in the heterozygotes. In hemophilioid state D, only one family has been reported.

COMMENT

Undoubtedly some patients reported as hemophiliacs in the past would, if studied today, be placed in the group of hemophilioid states. It seems that in the light of modern knowledge, the term hemophilia should be reserved for the congenital disease in which there is a deficiency in a plasma protein, not adsorbed on barium sulfate, which is precipitated from plasma by 30% saturation with ammonium sulfate. This deficiency results in a series of characteristic clotting tests if the disease is severe or in a low AHF by assay if the disease is mild. "Cross-matching" the plasmas of suspected hemophiliacs with well-established hemophiliacs is a valuable procedure in diagnosis, particularly in the milder cases. By both genetic and chemical criteria, our colony of bleeder dogs are hemophiliacs.[9] These animals have served as a standard of reference for many cases of human hemophilia.

It is of interest that most studies designed to detect a clotting abnormality in the female conductors of classical hemophilia have been negative. Occasional positive reports have been made, however.[12] In hemophilioid state C, on the other hand, the females appear to exhibit a latent clotting defect, or even a hemorrhagic diathesis. The hemophilic families, reported on in the past, in which female transmitters were observed to have a mild clotting defect may actually have had hemophilioid state C, rather than true hemophilia.

Many cases in the hemophilioid group may have been considered to be hypoprothrombinemia, especially in states A and B. In both of these states, the prothrombin time is long. Several years ago a long prothrombin time in itself was considered by some workers as indicative of a lowered plasma prothrombin. It is now known that the prothrombin time is dependent as much on other factors, particularly the B factor, as on prothrombin.[13] The case of hypoprothrombinemia reported by Rhoads and Fitz-Hugh in 1941 [13a] was probably an example of hemophilioid state A, since the prolonged prothrombin time was corrected by prothrombin-free plasma.

11. Koller, F.; Krüsi, G., and Luchsinger, P.: Ueber eine besondere Form hämorrhagischer Diathese, Schweiz. med. Wchnschr. **80**: 1101 (Oct. 14) 1950.

12. Haberman, S.: in Transactions of Fourth Conference on Blood Clotting and Allied Problems, New York, Josiah Macy, Jr. Foundation, 1951, p. 101. Owren, P. A.: Diagnosis of Hemophilic Conductor: Proceedings of Third International Congress of International Society of Hematology, New York, Grune & Stratton, Inc., 1951, p. 446.

13. (*a*) Rhoads, J. E., and Fitz-Hugh, T., Jr.: Idiopathic Hypoprothrombinemia—an Apparently Unrecorded Condition, Am. J. M. Sc. **202**: 662 (Nov.) 1941. (*b*) Owen, C. A., Jr., and Bollman, J. L.: Analysis of One-Stage Test for Prothrombin Time, J. Appl. Physiol. **5**: 515 (March) 1953.

SUMMARY

Hemophilia varies from mild to severe in its hemorrhagic manifestations. In severe classical hemophilia no antihemophilic factor (AHF) can be detected in the plasma, whereas in the mildest form of the disease there may be as much as 20% AHF. A simple clotting test, the partial thromboplastin time, furnishes a sensitive index of the clotting defect in all except the mildest cases of this disease. Normally, there is over a threefold range of plasma AHF, 50 to 170%. A given person appears to have a constant and characteristic level of this clotting factor. A group of persons were found who had AHF values intermediate between normal and hemophilic, 30 to 45%. With stress to the hemostatic mechanism, such as occurs postoperatively, these persons may suffer from transient bleeding (subhemophilia). Data now available suggest that the AHF level is determined by the existence of a series of isoalleles (*H, H', H", . . .*), the allele in a pair that is related to the higher AHF level being dominant. The milder forms of hemophilia also appear to be allelic. The allelic series may be designated: *H, H', H", . . . h^m, h.*

At least four separate hemophilia-like hemorrhagic diseases have been described in the past few years. A nonspecific terminology, hemophilioid states A, B, C, and D, is proposed for these diseases, pending clarification of the exact clotting anomaly in each state. All of the hemophilioid states resemble hemophilia in that they have impaired conversion of prothrombin to thrombin and a prolonged partial thromboplastin time. A simple schema, based on partial thromboplastin time and prothrombin time determinations, is outlined for the differential diagnosis of hemophilia and the hemophilioid states.

Smallpox.—Although usually considered to be an extremely infectious disease, smallpox does not have the epidemic potential of influenza or even of chickenpox. In the records of recent outbreaks, spread has usually been traced to direct contact between cases. It is true that spread may sometimes be indirect, for example, through infected bed linen. . . . The virus may survive for months or even years outside the body. . . . Epidemiological evidence suggests that most cases of smallpox are not infectious from the onset of illness but become so at the time of appearance of the skin eruption. This view was strongly held by Ricketts and is supported by recent observations. For example, in the Glasgow outbreak of variola major in 1949, individuals were infected from the first undiagnosed case and many of them were not detected and isolated until the appearance of the rash; yet none of these gave rise to further clinical cases although vaccination of contacts had not been carried out at this time. At the time the eruption occurs there is a large amount of virus in the lower layer of the skin epidermis, but, because of the impermeable nature of this tissue, virus is not shed into the environment until the rupture of vesicles and pustules at a later stage. In the mouth and pharynx, however, this protective layer is absent and lesions break down early and thus rapidly render the saliva infective. We have been unable to demonstrate any inhibitory effect on variola virus of saliva from unvaccinated or recently vaccinated persons; and our attempts to demonstrate variola virus in the mouth during the first two days of the pre-eruptive fever have so far been unsuccessful. In acute cases of purpura variolosa, however, where bleeding may occur under the skin from mucous membranes soon after the onset of illness, the patient may be infectious throughout the febrile period. A. W. Downie, M.D., and A. Macdonald, M.D., Smallpox and Related Virus Infections in Man, *British Medical Bulletin*, no. 3, 1953.

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THE MEDICAL PREPARATION OF A MEDICOLEGAL CASE

THE PHYSICIAN'S VIEWPOINT

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When one recognizes that, in the future, the greatest contributions in the field of medicine are likely to lie in that area relating medicine with the social problems of the community, it becomes at once obvious that forensic medicine by its very medicosocial nature represents an area that is ripe for development at this time. Much of the expert testimony presented in courts in this country at this time is of decidedly low quality, reflecting no credit to either medicine or the law. Indeed, by the very nature of the methods by which this evidence is gathered and presented, such expert testimony frequently works against the best interests of justice. A conference of this kind, therefore, serves a most useful purpose, in that it pinpoints the problem and provides an opportunity for its analysis and the development of ideas leading to its improvement. I believe, therefore, that the example that you have set today in the development of this program is one that is worthy of emulation by the higher centers of learning in the rest of the country, and I do hope that its influence will become widespread. If by good fortune this does occur, and the medical schools are stimulated thereby, one sincerely hopes not only that the subject will be taught in the didactic sense, as is true for the most part at this time, but that attempts will be made to give the undergraduate medical student what might be called "clinical" experience in the law courts, whereby opportunity is provided him to see a court in action with the testimony of witnesses, technical, expert, and otherwise.

PRELIMINARY CONSIDERATIONS

In discussing now the medical preparation of a medicolegal case, let me point out that medicolegal work demands a distinctly different mental attitude on the part of the physician from that applicable to the general care of patients. For example, in medical practice the physician has ample time to observe the daily changes in the disease of his patient and by means of certain diagnostic aids is able finally to arrive at a diagnosis through a succession of observations and on this basis to administer the indicated treatment. Compare this now with the doctor in court who is called on to render expert medical testimony. In contrast to the case in his medical practice where he has had many hospital or patient days to formulate his final opinion, on the witness stand the doctor has only one day in court. In order, therefore, to utilize this to its fullest advantage, he must come adequately prepared to testify on the basis of a full knowledge of the facts, coupled with sufficient medical experience in the particular field to enable him to render a final opinion that will withstand the rigors of cross examination by the opposing attorney and thereby carry full conviction in the eyes of the jury. To do this efficiently entails a good deal of preliminary preparation prior to testifying as well as some knowledge of court procedure. The basic elements involved in such preparation, first on the part of the physician and then in conjunction with the attorney for his side, constitute the basis of my presentation this afternoon. At the outset, let me say that my succeeding remarks must not be construed to represent a fixed pattern of preparation in every medicolegal case, for obviously cases differ as to the importance of the problems involved, with the consequent need for varying degrees of effort, time, and preparation.

Assume, then, that the medical expert on the basis of a request from a lawyer decides to take a case. His first responsibility prior to its preparation is to review the working data presented by the lawyer to him. This cannot and should not be done by the only too common practice of a single telephone conversation. Rather, it is necessary for the lawyer and the doctor to meet in person and to study with some care the information currently available. Parenthetically, I might add that it is fair to say that much of the medical information initially supplied by the lawyer lacks many details that are necessary for a full and proper medical evaluation of the problem. After this personal contact and the review of the evidence, the medical expert has a choice of one of two approaches, depending on the importance of the case. Thus, if he feels that there are sufficient medical facts available, even although they are admittedly incomplete, and that these facts will be strong enough to provide him with the basis for sound testimony on the witness stand, then he will accordingly prepare his testimony along these lines. If, on the other hand, the case is of great importance, or the medical facts are scant, it becomes necessary for the medical man to so inform the lawyer, emphasizing at the same time the need to have an investigator seek to obtain further medical facts, if such be available. After the collection of these, the physician then prepares his case for testimony.

At this initial interview between the lawyer and the doctor, it frequently becomes necessary for the latter, after a study of the medical data on the case, to point out that, because of the very nature of the problem, there is not at the moment adequate current medical knowledge that would enable him to express a positive opinion on the basis of the evidence, as sound and complete as it is. For example, if, in a person working in an environment in which he is continually exposed to radioactive material, a marked change develops in the blood leading to anemia and death and if at autopsy the presence among other things of a level of radioactive material is shown in the bones above that normally accepted as the limit of tolerance, then there is sound reason for the opinion that death was due to his occupation. On the other hand, if another and perhaps older person working

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in a different environment dies suddenly and at autopsy certain changes are shown in his coronary vessels, such as thrombosis or occlusion by arteriosclerosis, then there are sound grounds for a difference in medical opinion as to whether his occupation was the immediate cause of death. It is in this latter twilight zone of current medical knowledge that many of these medicolegal cases lie. It behooves the medical expert to inform the lawyer that such is the case, and it is further his responsibility to acquaint the lawyer with the views contrary to the opinion he is prepared to express. This, besides helping the lawyer in the preparation of his case, also provides him with the opportunity for deciding whether the medical expert with such views is the man that he would have represent his side in court.

In general then, the first interview between the lawyer and the doctor is a most important single step in the medical preparation of a case, as it gives the doctor the opportunity to decide on the merits of the medicolegal facts and whether he would desire to testify for the lawyer on the facts submitted. It is at this interview also that the lawyer can decide by his estimate of the doctor's approach to the problem whether he is likely to be a good advocate for his cause. Like the juror, the lawyer is not expected to know a great deal about medicine, but, by virtue of his experience with people, he has an opportunity to observe the workings of the doctor's mind in his approach to the problem confronting him. I would advise any lawyer approaching such an interview to study the doctor's reactions as to the evidence supplied him. If he appears to be too ready to accept all the medical facts as supplied and conveys the idea that the case is a "cinch" and that he should have no difficulty winning it, then the lawyer should beware of such a superficial approach, as it is probable that the doctor in question is not likely to give the matter more than superficial attention either in the course of preparation or in testimony in court. A personal discussion of this sort also provides the lawyer an excellent opportunity for estimating the objectivity and poise of the physician whom he contemplates engaging to present his medical side.

Here, too, a word might be said to the physician in respect to the initial contact with the lawyer in medicolegal matters. Many lawyers have told me of the difficulties they have in getting busy physicians to set aside sufficient time for the purpose of discussing in detail the medicolegal aspects of a proposed law suit. The serious lawyer who prides himself on the proper preparation of all the aspects of his case complains bitterly of the unwillingness of the busy physician to devote enough time and thought to study the data prior to developing a case for presentation to the courts. Frequently this works a distinct hardship on the lawyer and certainly on his client, because often it is this physician alone who possesses such evidence in the case as to offer a good guarantee of a favorable verdict to the client. The responsibility of such a medical man is clear, for if he has been willing to treat the case and if such a case is later subject to litigation, then his professional responsibility is to see the case through to trial. With these preliminary remarks, let me now proceed to a discussion of certain general principles that govern medical preparation and testimony.

GENERAL PRINCIPLES GOVERNING MEDICAL PREPARATION AND TESTIMONY

The first and basic principle governing the preparation and the presentation of testimony in a medicolegal case concerns records. Because of the considered importance of this matter, for some years now in the County of Nassau and through the influence of the medical examiner's office, it has been the practice to invite a representative of the district attorney's office to meet each July with the incoming house staff of Meadowbrook Hospital, the county institution, to discuss and outline the significance of accurate medical records, especially on cases that are likely to come to court. Dealing now directly with the matter of medical testimony, it is first of all important for the expert in the course of his testimony in court to give evidence of his objectivity and lack of partisanship, even although he is being paid a fee by one side for his testimony. His acceptance of the case is proof of his conviction that there are medical merits in the claim of the side that he represents. He must also recognize that the opposing side must have certain merit in their medical facts or there would be no litigation. Appreciating this, he will do more good for his side if he shows no reluctance in admitting the validity of the opposing medical facts when under cross examination, providing they warrant it. He should do this to the same extent that he has been willing to point out the existence of this controverting medical testimony to his lawyer in the course of preparation of the case. Such action puts him and his side in a stronger position in the eyes of the jury. In so doing, the medical strength of his side should not in any way be weakened provided there has been sufficient preparation and understanding between him and his legal associate as to how such controverting medical evidence is to be handled in his redirect examination by his own lawyer.

Another principle of importance is the willingness of the medical expert to admit personal limitations in his knowledge when under cross examination. At times, this might seem to be a bitter pill to swallow for the lawyer who employs him, as he would naturally like to assume that his medical witness is the fount of all knowledge. However, I think experience has shown that the jury is frequently more impressed by the medical witness who makes no pretense at omniscience and who is willing to admit lack of personal knowledge when such exists.

Still another general principle is that of expressing oneself on medical matters in the language of the layman, and further related to the use of simple understandable language in testifying is the strict avoidance of a patronizing attitude on the part of the physician, either to the opposing lawyer in the course of cross examination or to the jury when he is called on to explain certain medical facts to them. I think it is very important for the medical witness in court to realize that he is at times viewed by the jury with a certain degree of hostility, based no doubt on the understandable human reaction of a degree of suspicion toward anyone who seems to be deliberately "speaking over one's head." Obviously most physicians do this not for the desire to impress the jury with their knowledge but rather because of the common habit of the use of medical jargon, which is frequently quite unintelligible to the layman.

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These in brief are some simple principles that make for better rapport among the physician, the lawyer, and the court and that also serve to enhance the value of the medical witness in the course of his day in court. Leaving now these general ideas, I will next consider the specific steps that must be taken in the actual preparation of a medicolegal case prior to presentation of evidence in court.

STEPS IN PREPARATION OF A MEDICOLEGAL CASE

The data presented under this heading will be divided into cases that are tried in (*a*) the criminal, (*b*) the civil, and (*c*) the compensation courts. It should be stated that a common thread runs through the preparation of all types of medicolegal cases, namely, the need for an adequate and complete collection of the medical facts and then a detailed record of these facts for future reference. While the title of my discussion implies the preparation of the case with the lawyer for the purposes of testifying in court, let me say that, in my opinion, much greater stress should be placed on the actual collection of the medical evidence at a time even when no suspicion of a court trial exists.

Present Status of Medicolegal Procedure.—I will not attempt to express an opinion on the relative quality of the medical facts currently collected and recorded in the medicolegal field in the United States as a whole. I can, however, as a pathologist venture an opinion in that specific but fairly broad field of medicolegal work in which death occurs and where subsequently a criminal, compensation, or civil case ensues. I have no statistical facts on this matter, nor do I know how to acquire them, but I think nevertheless that it is perfectly safe to say that the number of such cases in which autopsy is performed by inexperienced physicians in this country, inexperienced in the sense of not having had special training in pathology, far outweighs those done by trained medical specialists in this field. Let me remind you that an autopsy performed in a case in which death occurred under suspicious circumstances might, if poorly handled, be indirectly the means of condemning an innocent man to death or contrariwise of freeing a criminal. So you see that in handling the medical preparation of the medicolegal case, one must get to the fundamentals of the problem, namely, the basic medical skill and experience necessary for the initial gathering of the evidence.

We must face the facts clearly. The quality of medicolegal work being done in this country comes close to the borderline of being a menace to the life, the liberty, and the substance of many of our citizens. I feel a singular delight in being able to voice this opinion before this audience, as I know full well that the state of Michigan is cognizant of its responsibilities in this field and has recently passed Senate Bill 1293 in the legislature, directed toward the abolition of the outmoded coroner system and its replacement by a medical examiner system. Here, I should like to pay a special tribute to the untiring efforts of your Dr. LeMoyne Snyder of Lansing, who has worked indefatigably during the last 17 years in an effort to obtain the passage of such a bill. At present, the bill allows the individual boards of supervisors in counties of your state to determine for themselves whether the medical examiner system shall replace the coroner system. This modernized approach should improve greatly the quality of medical testimony in court. I cannot let this opportunity pass without emphasizing what I consider the most important legislative advance in this field, and that is the establishment of a wide legal framework for the investigation of the circumstances surrounding the deaths of persons in the community other than those suspected of being of criminal nature.

Lest I be accused of being partisan let me immediately say that, if a coroner's system operating in a community is provided with an inclusive enough legal background and if the law is administered through the functioning of physicians well-trained in pathology and forensic medicine, then the quality of medicolegal work provided in that community should not be greatly different from that rendered under the more modern type of medical examiner's system. One has only to think of the excellent activities of the coroner's system in Cleveland to recognize this. The same is equally true in other parts of the country, notably in Louisana, where an inclusive coroner's law has been rewritten recently.

Beginning the Investigation.—Returning now to the main thread of the discourse, let me briefly consider the steps in the preparation of evidence in the first type of case, namely, a criminal case. Here one must emphasize the value of having a single medical investigator follow the case through from the actual scene of occurrence of the death to the witness stand. The information that the forensic pathologist obtains from a personal inspection at the scene of the crime is of fundamental importance. It is almost mandatory for him at the scene to record pertinent facts, such as the position of the body, the nature of the immediate physical surroundings, and the careful search for weapons, bullets, poisons, and the like. Coupled with this should be interrogation of either the witnesses to the crime or the persons in physical proximity to the location of the body at the time the police and the medical examiner arrive at the scene. An attempt should also be made to obtain photographs of the scene. This is usually done by the police, and special attention is paid to the location of the body and of important objects, by the device of special markings, markers, and the like.

An important part of this investigation is the proper identification of the deceased, with the name and address, and relationship if any of the identifying person. The removal of any portable objects that might be necessary in the investigation and that might later be used at the trial must also be carefully attended to. Such objects must be marked properly, catalogued, and placed in the safe keeping of a responsible party associated with the investigation, be it the medical examiner, the coroner, or the police. After this, the body is now in the custodial care of the forensic pathologist, and from here the chain of evidence is gradually forged. The intact preservation of this chain is something that cannot be too strongly emphasized. I believe that in many of the large jurisdictions, whether they operate under the coroner or the medical examiner it matters not, insufficient attention is paid to the preservation of this chain of evidence. I have often wondered what would happen to the expert medical witness in a major criminal case if the opposing lawyer spent

time probing into the question as to the real continuity of the evidence in respect to the handling of the investigation. Indeed, I know of an occasional case in which, because of laxity in this respect, the medical evidence was nearly upset by the simple expedient on the part of the opposing attorney of casting doubt on the proper identification of such things as organs of the diseased, improperly submitted to the toxicologist for examination. This matter is extremely important to the forensic pathologist, and he should make every effort to be certain that, from the time the body comes in to his care, until he testifies on the witness stand, he can personally vouch for lack of interference or tampering, either with the body or with the material removed therefrom at the autopsy for subsequent laboratory examinations. He must be certain on the witness stand that the opinions expressed on the materials examined represent such material coming from no other person than the dead person. In a large organization this is not always an easy matter, as the possibility of mixing or loss of specimens always exists. By setting up a system of cross checks as a general routine in the operation of his office, the forensic pathologist can easily avoid this dangerous error. For example, if the body is to be kept in the morgue overnight, it should be kept under lock and key. Organs that are removed for various laboratory examinations, including toxicologic tests, should be personally delivered to the laboratory technicians and signed for on receipt. Specimen containers must be labeled before specimens are placed in them, not after, as is often the case, and the name on the label should be checked by the pathologist before the specimen is placed in the container. Similarly, in connection with the withdrawal of blood for chlorides from the right and left sides of the heart in cases of drowning, it is important that the pathologist read carefully the labeled bottle and that the blood from the side corresponding to the label is placed in the proper bottle for subsequent chemical examination. Technicians and morgue workers are human and are subject to error. Such error can be readily avoided, however, by setting up beforehand a routine system and by carefully watching the material when it is being routed from the autopsy table to the various departments in the laboratory for examination. A further precaution should be taken, especially in the case of the organs retained in the toxicology laboratory. Such organs are likely to be kept for several days during the time that repeated determinations are being made and should be kept in a refrigerator under lock and key. If these simple precautions are observed, and if during the testimony in court any questions along these lines are raised by the opposing attorney, it places the medical expert in a favorable position in the eyes of the jury, if he can recount the custodial system by which he assures himself of accuracy of examination on material studied by him.

The Autopsy.—Space does not permit any detailed description of the methods surrounding the proper performance of a medicolegal autopsy. Suffice it to say that the emphasis on various phases of the examination will depend in large measure on the nature of the problem being investigated. I think it an unsound practice to approach any of these problems with what might be called a fixed routine. For one thing, such a routine frequently makes the examination stereotyped and removes the natural keenness of interest that should be present when one handles the problem as an individual matter. Despite all this, there are certain minimal essentials that must be observed in each case. One of these deals with the examination of the clothing while still in place on the body, with the proper and detailed recording of bullet holes, powder marks, knife slashes in the fabric, and the presence of any foreign or extraneous material on the garments. All these matters must be recorded in detail in writing for future reference and for correlation with the rest of the evidence gathered at the autopsy, at the scene, and through the questioning of witnesses by the district attorney's office and the police.

Similarly, in the performance of the autopsy, great emphasis should be placed on the importance of a detailed external description of the body, with pertinent and detailed notes on the nature of the various wounds and skin injuries. Special attention should be paid to the head, especially in the cases of males with abundant hair or in females, as frequently serious head injuries might easily be missed, because of the absence of any readily visualized external laceration or injury to the scalp. It is well to remember also that the head should be opened, even if there are no immediate external indications, as frequently in the course of this routine step, evidence of definite injury to the bones of the skull and to the brain is encountered, sometimes with little or no evident injury to the external surfaces of the soft tissues of the region. It is well to remember in connection with the external examination of the body, too, that the findings described thereon are more readily appreciated by the jury because of the ease with which they can visualize these changes, in contrast to the difficulties they face when a pathologist is testifying to the presence of internal injuries to the various organs.

This attention to detail in the external examination of the body cannot be overemphasized, especially seeing that it is in sharp contrast to the general approach of the hospital pathologist, whose major concern in the routine autopsy lies with the changes noted in the internal organs. The danger, therefore, is that the hospital pathologist in his limited experience with forensic cases is likely to minimize the significance of the external findings and frequently to spend greater time than is necessary in minute detailed description of organ changes internally that really have little bearing on the case in question.

After having gathered all the necessary information from the performance of the autopsy and the preservation of specimen material for future laboratory examination, all the facts obtained from the post mortem must be put in writing, preferably at the time that the autopsy is being performed rather than at some later date. In this connection, it is important that while the autopsy is in progress a record be kept of the persons who are in attendance in the room. A practical point in this connection is to discourage the presence of any person, medical or otherwise, who has no direct connection or responsibility in the case. I know from personal experience of an occasional instance in which a medical man who casually observed an autopsy and as casually made an erroneous

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statement to the family relative to the findings was unwittingly the cause of exhumation for reexamination of the body after autopsy had been performed.

With the completion of the autopsy, it must not for a moment be thought that in every instance the pathologist now has a final answer as to the cause of death. I think this is a fundamental difference between the approach of the forensic pathologist and that of the coroner's physician. The latter, by virtue of inexperience, often feels that he is bound to supply an immediate answer as to the cause of death after the coroner's autopsy. He does this at great professional peril to himself and certainly to the detriment of the scientific investigation of the facts. One should always remember that the gross examination of the body at autopsy is frequently the starting point for a series of secondary investigations along various laboratory lines, which ultimately provide the means by which the final opinion is reached. Often the coroner's physician, possessing neither the experience in the field nor the technical facilities to conduct these investigations, finds it necessary to supply an answer on the spot. You can readily judge for yourselves how inaccurate such ill-founded medical opinions are likely to be. One of the greatest dangers lies in the too ready "off the cuff" opinion expressed by the forensic pathologist or the coroner's physician at the height of the investigation, when the reporters and the police are at fever heat and when the pathologist feels a hankering for publicity, thus frequently bartering away his good medical reputation for a headline in the morning's paper. If he is a sound medicolegal investigator, he will forego the temptation of immediate "on-the-spot" publicity, in favor of a more secure medical opinion that he later can defend on the witness stand.

Final Preparation.—With the final gathering of all the threads of evidence necessary for weaving the pattern of the final conclusion, the forensic pathologist is now able to appraise various features of the case and in so doing to arrive at an opinion that is much more likely to be objective. He must be extremely cautious in coming to any conclusion that by direction or inference will carry great evidential weight in the final trial, unless he is certain that the weight of the gathered evidence will amply substantiate this conclusion.

Another point should be emphasized in connection with the preparation of his final opinion. He might find from later study of his autopsy findings certain discrepancies that need clarifying. Such clarification should be sought for by a review of his medical facts and by conferences with the police and with any other experts who might be in a position to supply him with the answer. This is especially true in the field of ballistics where paths of bullets are frequently erratic and where it takes an expert to help the forensic pathologist in their interpretation. In this matter of seeking aid and advice from collateral investigators, the forensic pathologist should have no hesitation in admitting his lack of knowledge in any field during the investigation and should show a willingness to discuss and be advised on these matters by suitable experts. It is only by this joint approach that all the facts can be gathered and the evidence clearly defined for trial. When all these various avenues of fact collecting have been exhausted and the final opinion arrived at, the forensic pathologist has still another and equally important function to perform in the preparation of his case, namely, that of conferring with the district attorney's office preparatory to going to trial. This, incidentally, is one of the weak spots in many jurisdictions, either because of the unwillingness of the pathologist to devote enough time to discussion with the district attorney's office or even perhaps from a disinclination on the part of the district attorney's office to cultivate a close liaison for this very purpose. In Nassau County since the inception of the medical examiner's office in 1938, it has been the fixed practice, except in obvious cases needing little consultation, for the medical examiner and the district attorney's office to meet formally for a review and a correlation of the medical and legal evidence. These reviews frequently take the form of an anatomic demonstration with the use of a skeleton to demonstrate the paths of bullets, knife wounds, blunt force injuries, and the like.

At these joint sessions a broad plan of presentation of the medical facts is evolved. The strong points in the medical evidence are emphasized, and the weak points are also brought under discussion. At times, considerable emphasis is placed on these weak points, because they might well be the basis for the defense. Various probabilities along these opposing lines are discussed, and the trial attorney is advised as to how to bring out favorable medical evidence, and suggestions are offered as to how he might handle the controverting medical testimony. Frequently too, the actual line of questioning is developed through these conferences. All these interviews necessarily take time and effort and obviously need not be undertaken in every case. There are, however, cases in which no regard should be paid to the amount of time involved, whether it be on the part of the physician or on the part of the district attorney, because of the issues at stake. One basic necessity for success is an amicable working arrangement between the district attorney's office and the medical examiner or coroner. In this pretrial stage there must be a free interchange of ideas and a frank admission of the weaknesses of the case as well as an evaluation as to where the main strength in the evidence lies. Speaking from the medical side, I can say that experience has shown that these contacts are most valuable to the physician, as he attains a better insight into the workings of the law and he hopes that his contribution is such that it makes his problems more understandable by his legal associates in the case.

If instances should arise in which the medical expert in the course of pretrial preparation with the legal team senses that it is the desire of the latter either to have the physician shade his opinion in favor of their side, or worse still, to omit from testimony important medical facts that are likely to be damaging to their case, the physician must hold his ground. His interests obviously are not those of helping the prosecution to set or maintain a high percentage of convictions or in assisting the defense through incomplete or "shaded" medical evidence to obtain an acquittal. Rather is it his professional responsibility to maintain a nonpartisan attitude, even though he might be functioning as a paid official in the role of coroner's physician or medical examiner. Fur-

thermore, he should see to it, more especially in criminal cases, that all the medical facts developed in the case be put in evidence, so as to insure their use as readily by the defense as by the prosecution. Fortunately, in many jurisdictions, this right to safeguard the defendant's interest is well handled by the expedient of supplying the defense with a full transcript of the record of the medical examiner's report.

PREPARATION OF TESTIMONY IN CIVIL CASES

The medical preparation of a civil case if such involves a death obviously follows the same principles outlined above. Apart from this type of case, the pathologist is frequently called to testify on causal relationship between some alleged injury and some subsequent medical condition, the commonest of which is cancer. The preparation for this type of case follows the general pattern. The physician should obtain all the past and present medical data that center around the injury and the subsequent course of events. He should first seek to verify their authenticity and their completeness, by means of review of the medical records dealing with the nature of the injury, the location, the duration, and the response to treatment. If such a review establishes the existence of missing links in the chain of evidence, this should be pointed out to the lawyer and suggestions given as to how and where this missing evidence might be found, as, for example, by investigation of the hospital records, on the various occasions of hospitalization both before and after the alleged injury. Conceivably some will raise the question as to the need for such elaborate investigative efforts. Let me say that, if the case is worth taking to trial, it is worth adequate preparation. More time and money spent on good investigative work often means more favorable verdicts, with the obviation of delay and postponements for purposes of obtaining further evidence that should have been available in the first place. The late Dr. Ewing of Cornell University medical school, a great medicolegal expert, used to say that more cases could be won if only more time and money were spent on investigation and less on testimony of medical experts! Furthermore, these investigations along medical lines are best conducted under the advice and guidance of a medical man rather than under a lawyer, as is frequently the case.

In these civil suits, if, after all the medical facts are assembled, sifted, and related and a conclusion arrived at, it is the opinion of the medicolegal expert that the evidence does not provide a fair chance of a favorable verdict, the legal advisor should be so informed with the reasons for such an opinion. On the basis of this, frequently he will attempt a settlement out of court.

PREPARATION OF TESTIMONY ON WORKMEN'S COMPENSATION CASES

At the outset, let me say that the experience in the matter of preparation and testimony in this type of case has been that entirely too little effort is expended by either the lawyer or the doctor on the individual problem. Frequently, the medicolegal expert is provided by telephone or in the corridor of the court with a few sketchy facts and by means of a hypothetical question is asked to express an expert opinion. The referee, administering an admittedly generously written law, frequently rules in favor of the worker in the face of medical evidence that, if it had been properly prepared and presented, might well have led to a different finding. The result is that the employer, in the state of New York at any rate, is being forced more and more to assume responsibility for disability and death claims that on their true medical merits lack any clear-cut foundation in fact. This is especially true in cases in which diseases of the heart are concerned, as well as in proved cases of cancer, in which a single trauma allegedly occurs and in which causal relationship is postulated.

It is obviously the duty of the medicolegal expert to see that the worker's interest is protected in keeping with the spirit and the letter of the workmen's compensation law, but, if his testimony is to be of value to the court, he must be certain that his opinion is based on a true knowledge of all the medical facts in the case, including even those that might not appear to have any immediate association with the claim. This has to do especially with the past medical history of the claimant, as frequently this knowledge alone is sufficient to invalidate the claim, particularly in certain types of bodily injury cases in which such a study reveals that the symptoms allegedly related to the injury frequently antedate the time of the alleged injury, as can be easily substantiated by records from hospitals or physicians previously attending the patient.

In this type of case, one of the most important facets is the sequence of time; for example, if it is claimed that a certain injury to the testicle is the cause of cancer of the organ and if a roentgenogram of the chest taken within a week after the injury reveals metastatic seeding of the disease in the lung, there is prima-facie evidence that the cancer antedated the injury. Similar evidence might be available at times through x-ray study in claims in which cancer of the bone is presumed to be the result of a single injury. The moral here is that any compensation case involving bodily injury should be promptly and completely studied, and such study must include x-ray examination, both of the part injured and of such other body areas as are indicated by the medical examination.

In the case of death claims in compensation court, the medicolegal expert must examine carefully the autopsy findings and should attempt to correlate the clinical evidence with these findings for the purpose of determining causal relationship. He should also attempt to evaluate the accuracy of the data gathered by the lay investigators, in respect to the credibility of the statements of witnesses to the accident or injury, keeping in mind the frequency of sharply conflicting statements of witnesses as to time and location and their estimate of the effect of injury on the claimant. A further aid to the expert witness is a study of the stenographic records of previous hearings on the case, seeking discrepancies in the medical aspects of the recorded testimony.

When all this material has been analyzed and digested and an opinion reached, the expert is now in a position to discuss the aspects of the case with the lawyer and can offer advice as to the merits of the claim leading either to a settlement out of court or to a hearing.

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SUMMARY

The preparation and testimony in a medicolegal case from the point of view of the physician is a matter that should not be undertaken lightly. When he is invited to testify, he must be certain that his particular experience warrants participation in the particular case. Having decided on this, his approach should carry that objectivity that is necessary to render his opinion of sound medical value to his legal associate in the trial of the case. Prior to the actual trial, he should spend the time necessary in going over the medical aspects of the evidence with the lawyer, reviewing for him the strong and weak points in the case and laying down an actual plan of trial procedure by which the fullest value of the expert's experience is obtained through the avenues of direct and redirect examination on the witness stand. This type of preparation should be followed uniformly, whether the case be of serious criminal nature involving the life or liberty of the defendant or whether it be of the nature of a civil or compensation case. In so doing he will be rendering proper service through his professional training and experience to the cause of sound medical jurisprudence, something that is sorely needed in this country, and that, I might add, is the inescapable social responsibility of every physician at this time.

Meadowbrook Hospital.

DIAGNOSTIC USE OF RADIOISOTOPES IN A GENERAL HOSPITAL

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and
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Four and one-half years ago a radioactive isotope program was started at Hackley Hospital in Muskegon, Mich. This city is situated about 200 miles from any large diagnostic and clinical center, and it was thought that the demand for radioisotope studies was sufficient to justify establishing such a program in a small general hospital. Our experiences in establishing and maintaining this program will be presented.

In setting up such a program certain factors must be present to assure continued and successful operation. First, and most important, there must be a demand for the services offered. There must also be adequately trained personnel available to administer and operate the department. Physical equipment and space must be available, and protection standards must be maintained. We felt that the demand for radioactive isotope facilities was present. This was due, in part, to the presence in the community of physicians trained at larger centers where such services had been available. Other physicians had become interested as a result of papers appearing in various scientific journals. We were able to form a radioactive isotope committee and meet the requirements established by the United States Atomic Energy Commission. One of us (K. E. C.) became available as radiation physicist on a part-time basis.

An elaborate outlay of equipment is not necessary. One good Geiger-Müller counter giving reproducible and reliable counts is necessary. We have found that, in a small community without the services of a full-time physicist, a standby Geiger-Müller counter is of great help in case of mechanical failure. We use a shielded counter tube with an aperture of 2 cm. that, with a detachable cone, can be reduced to 1 cm. (figure). This will localize small active sources within 0.5 cm., which is entirely satisfactory from a clinical standpoint. In addition to the Geiger-Müller counter it is imperative to have a radiation survey meter to monitor radiation from a protection standpoint.

A high-level radiation laboratory is space consuming, and it is a source of considerable expense in obtaining proper protection and the necessary special instruments. We have solved this problem by having the isotope section of the radiology department at Harper Hospital in Detroit standardize and dilute the concentrated solutions as received from Oak Ridge. We handle the diluted solutions in a low-level radiation laboratory where adequate protection is attained in minimal space with very little special equipment. Such dilute solutions may now be obtained by qualified departments from various commercial sources. The particular radioactive isotopes used for diagnostic purposes are determined by the needs of the local medical group. In our community we have had no experience with radioactive sodium, diiodofluorescein, or iodinated human serum albumin. Our surgeons still prefer the microscope to radioactive phosphorus (P^{32}) in establishing the character of tumors. With only six exceptions, when P^{32} was used for tumor studies, our diagnostic studies have been made with radioactive iodine (I^{131}). This may be explained by the fact that in our community we have no neurosurgeon, thoracic surgeon, or vascular clinic. The vast majority of our studies have been done at the request of general practitioners or internists who view with suspicion the results obtained with the usual apparatus for determining basal metabolic rates and wish an accurate evaluation of thyroid function. We are gradually getting more referrals from surgeons as they realize the advantage of knowing before surgery the location of the pathological areas within the gland.

Patients for diagnostic radioactive iodine studies are hospitalized for approximately 48 hours. This is partially for our own convenience and partly to facilitate excretion studies. The usual tracer dose is 50 μc of I^{131}, or, in children, proportionate amounts according to body weight. This is given orally to the patient, who has an empty

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stomach, about 8:00 a. m. the first morning. The first of the survey counts is started about two hours later. Two additional examinations are made on the first day and at least two examinations on the second day. In making these counts, definite locations over the thyroid region are studied each time. In addition, a general survey of the gland area and supraclavicular regions is done to locate any hyperactive or aberrant localizations. Counts are also made over the episternal notch, manubrium, and body of the sternum to locate possible retromanubrial or retrosternal extensions of the gland. In this manner we can determine the rate and degree of uptake of iodine by the thyroid gland as a whole, and we can also detect localized variation within the gland. Counts of the liver, stomach, and thigh are also made at each examination. This checks on rapidity of absorption from the gastrointestinal tract, retention of the radioactive iodine in the soft tissues, and remobilization of iodine in the liver.

Small aperture attachment for the counting tube, which is readily attached and reduces the aperture to 1 cm. diameter.

All urine is collected, and the time and quantity of output is recorded. A sample of each urine specimen is obtained and later assayed for radioactivity. In this manner we obtain an excretion curve that can be correlated with the uptake curve of the thyroid gland. We feel that 90% of the administered iodine must be accounted for, and the other 10% can be accounted for by fecal loss, loss in perspiration, and extra-thyroid retention.

TRACER STUDIES

Since beginning our radioactive isotope program we have made 412 tracer studies. Of these, six were done with P^{32} for tumor localizations. All other tracer studies on thyroid function have been done with radioactive iodine. There has been a marked range in age grouping among our patients, the youngest being five months and the oldest 85 years. It is beyond the scope of this paper to analyze fully the results of all of the cases that have been studied. This will be done in further publications. The breakdown of the diagnosis made is, however, of considerable and acute interest. Twenty-eight studies were done on children or infants. Ten of these were done on seven children who had osteochondrosis of the capitular epiphyses of the femur (Legg-Perthes disease). The studies revealed either thyroid hypofunction or the presence of toxic adenomas. This is in agreement with previous reports by Reynolds and others [1] and by Corrigan and Corrigan.[2] Radioactive iodine has also enabled us to differentiate hypothyroidism and mongolism in infants.

Of the adult group, thyroid function was normal in 11 patients. Generalized hyperfunction of the thyroid was present in 19 patients, and clinical findings of exophthalmic goiter (Graves' disease) were present in 6 of these. Thyroid function had generally decreased in 16 patients. In 79 patients one or more toxic adenomas were found in the thyroid glands. Submanubrial or substernal extension of the thyroid gland with varying degrees of intrinsic activity was discovered in 80 persons. In these patients, eight glands were postoperative residual or recurrent. In 21 patients mixed gland conditions were found. Colloid goiters were studied in three patients, and in four patients there was no appreciable thyroid function. Degeneration of the thyroid gland was considered to be possible in 18 studies. Metastases from thyroid carcinoma were found in two patients. In five patients thyroid carcinoma was present. Marked circulatory embarrassment was present in three patients, ruling out the possibility of evaluating thyroid function. In 12 patients occult edema was discovered. A definite chemical block was present in 29 instances and to a lesser degree in 21 other patients. Three studies were completely unsatisfactory.

COMMENT

The above results given in rapid-fire order, and without a chart to further clarify them, are confusing. The important point is not the number of patients for whom any certain results were obtained, but that, with the exception of three small groups, the diagnoses could not have been made with any of the single measurement or single time of measurement techniques. We wish to reiterate the statements made before the Section on Radiology by Reynolds and others [1] in 1952: "The criteria of adequate tracer study are: (1) anatomic location of the tissue that metabolizes the isotope, (2) rate of uptake and total uptake of tissue, (3) discontinuities and nonuniformities in tissue masses found, whether in normal thyroid region or elsewhere, (4) rate of decrease of any localization that shows unusual decrease from its maximum concentration, (5) the total urinary excretion, and (6) the shape of the excretion curve." These are not easy criteria to meet, and fulfillment of them requires well-trained and interested personnel. It also requires considerable expenditure of time and energy. Methods may be developed in the future that will ease their accomplishment, but the basic criteria will remain.

1. Reynolds, L.; Corrigan, K. E., and Hayden, H. S.: Detection of Concealed Thyroid Disease by Tracer Technique, J. A. M. A. **151**: 368-371 (Jan. 31) 1953

2. Corrigan, K. E., and Corrigan, H. S. H.: Tracer Studies in Children with Legg-Perthes' Disease, exhibit at annual meeting, the Radiological Society of North America (Dec.) 1951.

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The number of chemical blocks of the thyroid gland that have been encountered is high despite careful screening of patients. As referring physicians become more acquainted with the problem, the number of blocks is decreasing, and the problem is becoming less vexing. It is certain, however, that even under optimum conditions a certain amount of unmentioned self-medication will be present. One drawback of the tracer procedure is the expense of hospitalization for two days. If and when physical facilities allow, a selected group of patients may be examined on an outpatient basis and be allowed to collect their own urine specimens. Considering some of the difficulty that we have had with nurses and ward helpers, patients may do as well on this basis as by being hospitalized.

SUMMARY AND CONCLUSIONS

In our experience in a small general hospital, the bulk of diagnostic radioactive tracer studies has consisted of radioactive iodine tracer studies of the thyroid gland. Our method of procedure, with a general discussion of results and shortcomings, is presented. We believe that, as other diagnostic procedures are developed in larger centers, they will be reflected in our procedures. In our experience, establishment of a radioactive isotope department in a small general hospital is a feasible and practical procedure. In this way the advantages of these tracer studies may be extended more generally to aid the practice of medicine.

878 N. 2nd St. (Dr. Emerick).

THERAPEUTIC VALUE OF RADIOISOTOPES IN A GENERAL HOSPITAL

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Consideration of the value of radioactive isotopes as therapeutic agents in a general hospital naturally requires an assessment of their characteristics and usefulness, either as substitutes for less available or less safe instruments presently at hand or as a means to appreciably advance the treatment of disease. The value of any physical agent or drug depends in some degree on its qualities and properties but more importantly on the knowledge, skill, and intelligence of those who apply it. Such is particularly true of the radioactive isotopes, for which there is no antidote and in whose administration there is no reversible reaction. In fact, the isotopes are more dangerous for both the giver and the recipient than those agents that were previously used, and certainly will be more hazardous than helpful if those who attempt to employ them are not fully prepared both physically and intellectually and blessed with better than average judgment.

The early investigation of physiological applications of the radioactive isotopes produced in a cyclotron fortunately was limited by the available quantity. With the advent of the nuclear reactor and its potentialities for greater productivity and variety of the unstable isotopes, the general public and also the medical profession have tended to clamor for another group of "wonder drugs." Little heed has been taken of the fact that the isotopes are not so plentiful nor so innocuous as broomsticks nor graced with altogether bewitching qualities for the discovery and cure of disease. The informed members of the profession are fully aware that the unstable isotopes can be as malevolent and as productive of toil and trouble as Macbeth's witches and their brew.

Before any consideration is given to the use of these agents, there must be acknowledgment by the administrative boards of the hospitals, in spite of their desire that the institution be in the forefront in their community, and by the attending staff, with the desire to do all possible for the benefit of the patients, of the grave responsibility that they propose to undertake in the use of radioactive isotopes. This is a field that will be in the category of research for some time.

Certain minimum requirements as to personnel and physical plant have been laid down by government as prerequisite to permission to procure radioactive isotopes. It is extremely important that the philosophy and urge of "free enterprise" do not bring harm to patients by the observance of these requirements only in the letter of the law rather than in the full spirit. Hence, no hospital should consider the use of the unstable isotopes unless it and its medical staff are fully prepared to sacrifice time and funds, to submerge personal ambition and desire, to work closely as a team in the best interests of the patients, and to realize and accept the responsibility of research in this as yet inadequately charted field.

At present, the types of disease and number of patients peculiarly suitable for treatment with the available radioactive isotopes is limited. Without adequate staff and adequate number of cases for comparative study, no general hospital should try to explore the diagnostic or therapeutic applications of radioactive isotopes.

The second consideration in assessment of the potential value of radioactive isotopes is the purpose for which they may be used, namely (1) as substitutes for agents previously available, either as equivalent in usefulness but (*a*) more readily available, (*b*) of greater versatility, (*c*) of greater power, or (*d*) with less potential side-effects or hazard; or (2) with the capacity to do a new job, such as by means of selective physiological affinity for a specific organ or tissue. It is evident at once that criteria of (*a*) physical characteristics and (*b*) biochemical or pharmacological suitability must be established; and in general each specific isotope will have to be scrutinized under both headings. This is not so necessarily rigid in the matter of substitution for external irradiation as for intracavitary, interstitial, or parenteral administration.

GENERAL CONSIDERATION OF AVAILABLE ISOTOPES

Of the known and probably existing 1,052 isotopes and isomeric pairs, 282 are stable, and 118 have a half life measured in seconds, 199 in minutes, and 96 less

From McGill University and the Royal Victoria Hospital.

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than 12 hours. Subtracting these and the 49 naturally radioactive elements and their isotopes, there remain some 209 unstable isotopes with half lives of from more than 12 hours to 60 days and 99 whose half lives extend from 60 days to more than 1,000 years. Those with a half life less than 14 hours are relatively impractical and afford some extra hazard; those of greater than 30 to 40 days are not safe for parenteral use. The remaining portion of these active isotopes (about 70) must be studied extensively as to their physical and pharmacological qualities before adequate assessment can be made of their therapeutic value. Only a few, so far, have been shown to be producible in practical quantities with present facilities, to possess suitable and useful physical characteristics, and to be pharmacologically safe and physiologically useful.

The physical usefulness of the radioactive isotopes depends chiefly on their emission of either beta or gamma radiation, the energy of that radiation, and their half life. So far, for external therapy, phosphorus 32 and strontium 90 have had a fair clinical trial among the beta emitters and cobalt 60 among the gamma sources. All three fall into the category of substitutes for presently available radium sources.

For intracavitary administration, sodium 24, phosphorus 32, cobalt 60, bromine 82, and gold 198 in various forms and with various techniques have been found useful. These, save phosphorus and gold, are present substitutions for previously available but less facile radium. Gold 198 and phosphorus 32 in colloidal form are examples of physiologically useful isotopes in the management of serous membrane malignant effusions. About 27 active isotopes possibly are usable internally. The specific avidity of various organs or tissues for a high majority of these is not known. Consideration of the parenteral administration of radioactive substances must include study of not only the full gamut of the alpha, beta, or gamma emission and the half life of each substance but also very specifically the pharmacological safety and biological activity or physiological progress through the tissues. So far only iodine 131 and phosphorus 32 have been proved acceptable.

These various facets of the use of radioactive isotopes emphasize the absolute necessity for a full complement of medical staff, including persons especially experienced in clinical physiology, pharmacology, metabolism, hematology, endocrinology, radiation therapy, and radiobiology, together with radiation physicists and a corps of trained technicians, as well as the required physical plant and instruments to be available in every general hospital that presumes to treat disease intelligently with these physical agents; for this entire field still remains in the realm of research and must be subjected continually to critical review.

SPECIAL CONSIDERATION OF VARIOUS ISOTOPES

With this relatively brief discussion of the general problems associated with the therapeutic use of radioactive isotopes, we may pass on to an even more brief commentary on the few isotopes that have been studied so far.

External Irradiation.—The choice of a radioactive isotope for external therapeutic application must be predicated on availability, its relative safety, facility of manipulation, and the superiority of its radiation as to either (*a*) virtual total absorption in the superficial millimeters of the tissue, thereby effecting a more satisfactory biological reaction than available with low or medium voltage x-radiation or radium; or (*b*) a high energy level of sufficiently short wavelength and relative monochromatic character to effect superior depth-doses compared to high-voltage x-radiation or large quantities of radium.

Phosphorus 32, with a half life of 14.3 days, emitting only beta radiation (1.7 mev) with a range of 7 mm. in tissue, appears to be useful in treatment of superficial carcinoma of the skin, some keloids, and localized keratoses. The blotting-paper technique of Low-Beer has been improved on by Sinclair, Blondal, and Smithers at Royal Cancer Hospital by means of the incorporation of 20% red phosphorus (by weight) in polyethylene that can be pressed into thin, flexible, glossy-surfaced sheets before activation in the nuclear reactor.

Strontium 90 (half life 25 years, beta radiation of 0.65 mev, no gamma radiation) in a surface applicator has been shown by Friedell and Thomas to be of significant value in the treatment of the benign vascular lesions of the conjunctiva and cornea. This is an addition, or rather an advance over the older radium D/E applicator.

Cobalt 60 (half life 5.3 years, with an almost monochromatic gamma radiation [1.16-1.32, average 1.25 mev]) affords a relatively ideal agent in the second group for the treatment of deep-seated malignant lesions. A cobalt 60 source of 1,500 curies equivalent can be provided in the nuclear reactors with high flux. Its high activity will afford an energy output of approximately 40 r per minute at 80 cm. source-skin distance. Its use should be restricted, however, to only those therapeutic centers that have at least 300 new cases of major malignant neoplasms per year (to afford sufficient numbers of patients and for selection of cases), that have full staffs, including experienced radiation therapists who personally direct the treatment, observe their patients daily, and are aware of the hazard of high exit doses and the lack of the usual skin reactions common to more conventional x-radiation. The collimation of the beam with reduction of penumbra to a minimum presents a real problem in engineering physics, which we believe has been solved most satisfactorily by Prof. H. E. Johns.

Intracavitary Irradiation.—The selection of isotopes for irradiation of malignant disease within a cavity will depend on whether the lesion is sufficiently thin and widely distributed to utilize beta radiation or its depth and location necessitate a gamma source. Hollow cavity or viscus: A solid source, to be molded or compounded to fit a known cavity, can be afforded by shaping cobalt into a special form or by using beads or pellets. However, inasmuch as metallic cobalt is absorbable by body fluids, a source of whichever shape must be plated with gold or encased in platinum and then activated in the "pile." Certain technical difficulties in proper introduction or fixation of such sources and problems of hazard to per-

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sonnel in handling them in this manner must be appreciated. Cobalt 60 can be used thus in carcinoma of the cervix and carcinoma of the maxillary antrum. It also may be employed in cylinder form as a point source suspended in the urinary bladder.

Walton and Sinclair have reported on the rather satisfactory use of sodium 24 (half life 14.8 hours, beta radiation of 1.4 mev and gamma radiation of 2.76, 1.38) in sodium chloride solution, or bromine 82 (half life 34 hours, beta radiation of 0.47 mev and gamma radiation of 1.35, 0.79, 0.55) in calcium bromide solution in a 150 ml. balloon attached to a catheter in selected cases of carcinoma of the bladder in which the lesion does not extend deeper than the submucosa. In their experience, three fractionated doses of 2,000 γ r + 500 β r each at weekly intervals was more satisfactory than a single dose of 3,000 γ r + 4,000 β r for sodium 24 or 4,000 γ r + 1,000 β r for bromine 82. In the female, this balloon may be introduced via the urethra; in the male, via a small incision in the perineum and the posterior urethra.

Serous Cavity (Pleura or Peritoneum): Modification and retardation of serous effusions in those patients with embarrassing pleural effusion or ascites due to disseminated metastatic neoplasm (chiefly from the breast or the ovary) have been accomplished with colloidal gold 198 or colloidal chromic phosphate. The short half life of Au^{198} (2.7 days, approximately 95% beta radiation, 0.96 mev maximum, gamma radiation 0.41) reduces its usefulness at appreciable distances from the source of supply; hence some investigators have recently used the colloidal chromic phosphate with its advantage of the longer half life of phosphorus.

Such colloidal suspensions must be physiologically harmless, must have a particle size large enough to prevent dissemination, must be sufficiently stable to prevent an uneven precipitation, must be available in high specific activity to avoid use of large volumes, must have a short half life to enable delivery of dose in a reasonably short time, and must emit predominantly beta radiation for local effect on the serous membrane but sufficient gamma component to permit external detection of the distribution. Neither gold 198 nor colloidal chromic phosphate can be expected to affect large masses of metastatic neoplasm. Reports on both indicate appreciable reduction of accumulation of effusion may be achieved.

Interstitial Irradiation.—So far cobalt 60 and tantalum 182 (half life 111 days, beta radiation 0.5 mev maximum, gamma radiation 1.13) and gold 198 have proved of value in interstitial therapy of malignant lesions. The absorbability of cobalt has been mentioned. This requires that any Co^{60} source must be sealed in some physiologically inert material. It is more brittle and more expensive than tantalum. Tantalum is physiologically inert. Its higher density, considerably higher specific activity with a gamma radiation of relatively the same wavelength further recommends the use of tantalum. In all interstitial use, local reaction due to beta radiation and alpha radiation of the source material must be reduced to a minimum. Cobalt 60 requires encasement to prevent absorption, and all three (Co^{60}, Au^{198}, and Ta^{182}) should be sheathed in order to reduce or remove the beta component emitted. The relative intensity of Co^{60} is of the order 13.5 r/hr./mc. compared with 6.1 r/hr./mc. for Ta^{182}.

Gold 198 grains can be used as a substitute for radon seeds; however, these should also be encased in platinum or plastic. In general, they do not appear advantageous compared to radon in gold seeds. Considerable study is being pursued by the University of Iowa group on the interstitial injection of colloidal gold 198 in prostatic malignant disease. Some encouraging evidence has already been accumulated, but this work is distinctly still in the research phase. The general hospital that admits less than 500 new patients with malignant disease in a year will have little use for intracavitary or interstitial means of treatment with radioactive isotopes.

Parenteral Administration.—Therapeutic use of radioactive isotopes by the parenteral route requires first that the active element and its compounds are not toxic and are physiologically useful to the tissue that one desires to affect. Secondly, the active element must not be one that the body may substitute for another (such as strontium 89 or yttrium 90 in replacement of calcium in bone), transfixing the element in tissues that are not to be irradiated; nor must the element have undesirable radiation quality or half life.

Selection for therapeutic value will depend on: (*a*) the degree of selective chemical affinity or use that a specific tissue or cell type has for the element and the metabolic activity of that tissue or cell; (*b*) the degree to which the "uptake" (by either absorption or utilization) will be effected without material deleterious physical or chemical effect by the element or its carrier on other cells, tissues, or the body as a whole; and (*c*) the extent to which its radiation will benefit the local cell or tissue, an intimately neighboring tissue complex, the whole organ or entire body, with less deleterious effect on the tissue or whole organism than some other therapeutic agent.

Radioactive Iodine: It is readily apparent that radioactive iodine meets virtually all the above-mentioned criteria in regard to thyroid disease. The selective chemical affinity for and use of iodine by the thyroid gland, with little need for iodine in other organs or tissues save as protein-bound in thyroid hormone, is peculiarly favorable. The association of disturbed thyroid metabolism with other metabolic and certain cardiovascular dysfunction increases the value of this agent. Its half life of 8 days, with beta radiation of 0.595 mev penetrating about 2.2 mm. and adequate gamma component to permit external detection in both mass and detail, as well as dominant excretion via the urinary tract, make this isotope an almost ideal example.

The two previously established means for treatment of thyroid dysfunction are not entirely satisfactory. Surgical subtotal resection in the best of hands affords control in but little over 60% of those operated on, has today a small but definite mortality risk, includes some hazard to the recurrent laryngeal nerve and parathyroid glands, requires hospitalization, and is not always practicable.

The antithyroid drugs have afforded better means of preparation for surgery, to a certain degree allow election of time for surgical intervention, and in some cases have "relieved the patient of his symptoms while he cures himself" (Blomfield). But the long-term results tend to be disappointing, not over 50% stabilize after one course, the patient tends to revert to his thyrotoxic state when

the drug is withdrawn, and the toxic side-effects of propylthiouracil and methylthiouracil (agranulocytosis, drug sensitization) are not favorable.

The gradual depression of thyroid hyperfunction afforded in the specific cellular depletion of the gland by I^{131} without damage to other tissues is a strong recommendation for its use, especially in selected cases. Hospitalization is not required; there is no surgical hazard nor toxic side-effect. Certain observers consider that exophthalmos is reduced to a greater degree than with surgical ablation. Neither pressure symptoms nor cardiac complications are significant as contraindications. The gland reduces in size, and there is certainty of correction of dysfunction in time, with supplemental dose if required. Large series or groups of series for statistical analysis are not yet accumulated. Some observers believe that 85% of patients can be brought to a euthyroid state in about 3.5 months with a single dose.

At our present state of knowledge in the matter, the indications for I^{131} therapy are: (*a*) diffuse toxic goiter in patients over 47 years of age, (*b*) diffuse toxic goiter in younger patients when antithyroid drugs fail and surgery is refused, (*c*) hyperthyroidism complicated by, or associated with, cardiovascular disease, and (*d*) recurrence after surgical intervention. The major contraindications appear to be: (*a*) acute hyperthyroidism in younger patients, (*b*) pregnancy, and (*c*) nodular goiter. In each case, however, serious consideration must be given to the possible advisability of either surgery or a test of the antithyroid drugs in preference to I^{131}. In patients under consideration for I^{131} therapy, careful tracer studies should precede decision. These must include basic and subsequent periodic mass counts, together with careful scanning of the thyroid area for irregular uptake, and urinary excretion counts over at least 24 hours, preferably longer. Assessment of the resultant curves is not valid unless compared with similar studies of presumably normal persons residing in the same geographic area. Supplementary or comparative observations on the basal metabolic rate, blood cholesterol, and serum protein-bound iodine are important. We find that hospitalization, or at least day hospitalization, of the patient is necessary, in order to obtain adequate periodic counts and to collect the urine for excretion determination.

The dose considered therapeutic for nonmalignant thyroid disease varies from observer to observer, and in any one group there will be an appreciable variation in effectiveness dependent on the metabolic activity of the patient and his thyroid. We consider at present that it is better to administer a standard dose and repeat it in three to four months if required. The optimum average dose is probably in the range of 8,000 to 10,000 rep. Some have been brought to a euthyroid state with 4,800 rep.

A latent period of two to three months is to be expected before radiation effects are clinically manifest. Antithyroid drugs may be required during this period. Careful reassessment is necessary before any supplemental dose is administered. If the response to the initial dose has been rapid, further delay before additional treatment is advisable. The clinical reaction must be observed closely, especially as to remission of symptoms, change in size of the gland, and subsidence of tachycardia or other cardiovascular signs, together with any alteration of the peripheral circulation.

It should be emphasized that similar results can be produced with properly managed conventional x-radiation of the thyroid. Therefore, unless a general hospital determines that it has real need for and must inaugurate an isotope program with its attendant requirements of staff and physical plant, if that institution has adequate therapeutic x-ray apparatus properly operated by a well-qualified and experienced therapist, there is not sufficient additional value in radioactive iodine therapy to warrant the required investment and additions to staff for that alone.

Since Hamilton's first observation and Seidlin's initial report on treatment of malignant thyroid neoplasm with I^{131} there has been little advance in methods or means to cause the predominantly non-iodine-metabolizing thyroid malignant lesions to utilize radioactive iodine. The early small, palpable, nodular tumor confined to the thyroid gland and without metastases is best managed by surgical removal of the lobe or subtotal thyroidectomy, with or without dissection of all regional nodes. For the large, rapidly growing mass, with or without pressure complications, radioiodine therapy is too slow and x-radiation preferable.

In the realm of distant metastatic deposits, I^{131} seems to have some appreciable value, especially if the thyroid gland has been removed almost entirely. Total body tolerance of the relatively high dosage required is an important factor in conjunction with the avidity of the gland proper or its metastases for the active iodine. The antithyroid drugs and thyrotropic hormone may assist, but there is some hazard in the precipitation of a myxedematous state by the administration of large doses of thiouracil for some weeks and then sudden withdrawal in preparation for a therapeutic dose of I^{131}. The total number of cases of carcinoma of the thyroid in even large centers for diagnosis and treatment of malignant disease of all kinds is so small that no general hospital is warranted in providing for this type of treatment especially.

Phosphorus 32: Hope has been entertained that phosphorus, required in the normal metabolism of bone and a common constituent of the hemopoietic tissues and cells would prove to be of specific value in the blood dyscrasias and malignant diseases. Considerable numbers of observations have been made as to its effect in acute and chronic leukemia, polycythemia, the malignant lymphogranulomas and lymphosarcomas, and multiple myeloma.

So far there is some evidence that phosphorus 32 offers significant advantage over the more ancient methods and means. However, the general hospital, well-staffed and equipped for proper roentgen therapy and with members skilled in the use of chemotherapeutic agents in these malignant diseases, as in the case of radioiodine, should not embark on an isotope program for this alone and should include such treatment in a general isotope research plan only if its clientele includes annually an appreciable number of such cases.

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SUMMARY AND CONCLUSIONS

The radioactive isotopes afford, in but a few instances so far, means whereby nonmalignant and malignant disease may be controlled more easily or less expensively than with the older or more accessible methods. The use of virtually all of these isotopes is still in the field of clinical research.

Cobalt 60 is at present useful as a substitute for 3 million volt x-radiation in deep-seated malignant disease. Its use should be restricted to centers having large numbers of new cases per year, in order to afford adequate selection and comparison of the clinical material for research purposes. Strontium 90 in a surface applicator can be used for vascular lesions of the conjunctiva and cornea and is an improvement over the radium D/E applicator. Colloidal gold 198 and possibly phosphorus 32 in a colloidal chromic phosphate preparation can be used for the amelioration of serous or serohemorrhagic effusions in the pleural or the peritoneal space associated with disseminated malignant disease.

Sodium 24 or bromine 82 in solution, encased in a plastic balloon, are useful for the treatment of widespread superficial carcinoma of the urinary bladder. Cobalt 60, tantalum 182, and gold 198 offer considerable promise for interstitial irradiation as substitutes for and possibly improvements upon radium and radon. Iodine 131 has proved to be so far the nearest approach to the ideal radioactive isotope for parenteral and selective therapy of thyroid disease. Phosphorus 32 has certain possibilities in the dyscrasias and neoplasms of the hemopoietic tissues.

In general the entire study of radioactive isotopes as therapeutic agents is still in the realm of research and should be so considered. No general hospital (*a*) that discovers and treats fewer than 500 new cases of malignant disease or 100 of thyroid disease per year, (*b*) whose staff is not fully diversified and especially skilled in clinical physiology and radiation therapy, with an experienced radiation physicist or biophysicist, (*c*) whose staff will not subrogate all personal interest to close teamwork in such an investigative program, and (*d*) whose administration is unwilling or unable to afford the physical facilities required should consider therapeutic application of the radioactive isotopes at this time.

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THE RADIOISOTOPE PROGRAM IN THE GENERAL HOSPITAL

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The time is rapidly approaching when a radioisotope program in the general hospital will be taken as much for granted as any other laboratory service. Its scope will depend on the size of the hospital and the interests of the staff, but we can safely say that it will include thyroid function studies, blood volume determinations, radioactive phosphorus (P^{32}) therapy of leukemia and polycythemia, radioactive gold (Au^{198}) therapy for ascites incident to generalized abdominal or pleural carcinomatosis, and radioactive iodine (I^{131}) therapy for exophthalmic goiter. In addition, the radioisotope program may include localization of brain tumors and liver metastases, determination of extracellular fluid volume, isotope clearance measurements for various tissues, studies of peripheral vascular disease, and various types of therapy. Foreseeing this and also wishing to be among those to derive benefit from any new agency, hospital medical boards and administrators are studying procedures and requirements for inaugurating such a program. This includes, on the one hand, providing adequate space and equipment and, on the other, solving problems of personnel, training, procurement, and general techniques. The former considerations have been covered in the preceding discussion. I propose to discuss generally certain points regarding the others.

There has been, in some quarters, the feeling that the Atomic Energy Commission is unduly restrictive in limiting use of isotopes to trained personnel, under stipulated conditions. Let it be said at the outset that the commission is anxious to have as wide employment as possible, compatible with the safety of all concerned, of the nonmilitary products of atomic energy. It is because of the very real danger of injudicious use of these materials that the restrictions have been set up. Everyone is aware of the tragedies that followed early incautious use of x-rays and radium; it is essential to avoid a repetition of this. The primary concern of the Subcommittee on Human Applications is the safety of patients, doctors, technical staff, and possibly "innocent bystanders." Beyond this they may express an opinion as to the feasibility of a procedure, but they do not attempt to pass on its value. Feeling that responsibility for an isotope program should be vested in a group rather than in an individual, the advisory committee recommends that every institution wishing to use radioisotopes form an "isotope committee" to supervise and control use of these materials. Membership of this committee should include a hematologist, an internist, a person experienced in assay of radioactive materials and in protection of personnel against ionizing radiations, and, when possible, a therapeutic radiologist and a qualified physicist. The latter two are essential when therapy is to be done, although they may serve on a consulting basis and not be staff members.

In commencing a radioisotope program, the person who is to take the responsibility for patients must have some firsthand knowledge and experience in isotope uses. After he has acquired some experience in the uses of a few isotopes, he may make use of others without taking additional training, provided no new or great radiation hazards are concerned. In applying therapeutic pro-

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cedures that have been developed elsewhere, a brief period of observation is recommended, even for experienced users of isotopes, since this may aid in avoiding pitfalls. Minimum criteria for the physician who will use or directly supervise the use of radioactive materials have been set forth by the Isotopes Division. He must be an accredited physician in good standing with his local medical society and must either have had previous clinical experience with radiation or radioactive materials or be directly collaborating with a person possessing such training and experience. Minimum experience for use of I^{131}, P^{32}, and Au^{198} includes three months' active cooperation in a group using these isotopes and a month of actually handling the isotopes and participating in the management of cases. Unfortunately, there is a scarcity of facilities for such training, especially in smaller towns. However, various institutions are beginning to offer short courses combined with visiting programs; it is hoped that before long this "bottleneck" will be removed.

The function of the radioisotope committee is to review applications for use of isotopes within the institution, primarily from the point of view of radiological safety, but they may also serve in any advisory capacity they feel is indicated. They should be an active group, keeping in touch with all the developments of the isotope program and not leaving responsibility to the chairman. They not only should approve a program at its inception but should review it regularly by means of progress reports. They must be in close touch with the radiation safety officer for the institution, who is usually a member of the committee.

The radiation safety officer will usually be either the physicist or the chemist in charge of the isotope laboratory, or the radiologist, or he may be anyone with the necessary knowledge. He has responsibility for maintaining radiation safety throughout the institution and should have authority to enforce his recommendations. He will make sure that all handling procedures are adequate for safety and will instruct personnel on cleaning up after any spill and on disposal of radioactive waste at any level. He will provide instructions for residents, nurses, orderlies, and other attendants not only to make sure that no dangerous habits are formed but also to make sure that no ridiculous extremes of safety requirements are set up. Such an educational program is frequently essential when the use of isotopes is started in an institution. Personnel who have never worried at all about patients who have fairly large quantities of radium in their bodies, such as women patients with cancer of the reproductive organs, suddenly become much concerned about patients with tracer or small therapeutic doses of isotopes. Assurance should be given that such patients present no hazard and that the only problems come with those receiving therapeutic doses in excess of about 30 mc. of I^{131} or Au^{198}. As for disposal of excreta from patients undergoing isotope tests or treatment, no special plumbing facilities are necessary. As a matter of fact, it is seldom that special instructions need be issued about this, unless urine or feces are to be saved for laboratory study.

In addition to the isotope committee and the radiation safety officer, the isotope laboratory must maintain at least one technician who will do the actual work of standardizing and dispensing the radioactive material and doing the routine measurements on patients and specimens. Unfortunately, at present there are few places that train such technicians, which means that someone in the organization must be prepared to undertake this responsibility. If there is a radiation physicist, he will be qualified; usually the radiation safety officer will also be qualified. If this training is to be undertaken by a clinician, the isotope committee should make sure that he is conversant with fundamentals of Geiger counting, limitations of the instruments, and elementary statistics of counting (to give proper significance to background and other counts), and that he appreciates the value of plateau checks and frequent calibration and the significance of the geometric relations of counter and sample or patient. A technician can learn to use a counter in five minutes; it may take her as many months to learn how to avoid all the pitfalls between receiving the material from Oak Ridge and turning in a correct report to her supervisor. The dispensing of calibrated solutions by chemical houses or by consultants may minimize the chance for error in calibrating Oak Ridge material. On the other hand, it may give a false sense of security. The need for accurate pipeting and accurate application of decay curves is just as great and so is the need for all precautions regarding background, patient, and sample counting. College graduates with training in any of the laboratory sciences have made satisfactory technicians. It is felt that this type of education is highly desirable. A person with less schooling could certainly learn the procedures but would seldom be able to develop an intelligent understanding of them.

With the isotope laboratory ready to function, those who are to use the materials obtain from the Atomic Energy Commission copies of form 313 for each isotope and file their applications. The first application submitted should contain a list of the members of the isotope committee, with their qualifications, and an inventory of equipment available for measurement and survey purposes. This information never needs to be repeated in subsequent applications unless radical changes have taken place. On approval by the Subcommittee on Human Applications, isotopes may be obtained and work started. Some institutional authorities may be unwilling to commit space and invest funds for an isotope laboratory and equipment and then face the chance of having their application turned down. It may be said at once that, when an institution has complied with the requirements, it is extremely unlikely that authorization will be withheld. However, an acceptable alternative after establishing the local isotope committee is the presentation to the Isotopes Division of the equipment and space that will be acquired if the application is approved. Approval will then be issued contingent on completing the layout. The Isotopes Division maintains a consulting service that may be valuable in setting up an isotope laboratory in a hospital. Through correspondence they will answer questions on such subjects as methods, equipment, protection, and standards. They will also send a field consultant to give on-the-spot advice. Various professional consultants also offer such service.

As to the integration of the isotope laboratory into the hospital organization, few specific recommendations can be made. As tests become routine, they may be administered in the same manner as other clinical tests

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such as those performed in the clinical laboratory. The result of the test may be reported without interpretation, leaving this to the physician who asked for it, or an interpretation may be furnished by the director of the isotope laboratory or his assistant. The first method can be illustrated by a report that simply gives the percentage uptake of radioactive iodine at 24 hours, without interpretation; this is the same procedure as used in giving the result of a basal metabolic rate measurement. On the other hand, a report of the percentage uptake might be accompanied by a statement as to its probable clinical significance. The former method could be used only in an institution where staff members were well aware of the significance of reported results. Therapeutic programs should be incorporated into the regular radiation therapy division; they are simply another form of radiation treatment. For special problems the radiologist will want to work in collaboration with other specialists, just as he does in the use of radium or radon interstitially.

While isotopes are comparative newcomers to the field of medicine, they have already been found valuable in many ways. There is no doubt that they will be applied more widely and that more and more general hospitals will establish units for their use. It is probable that units will generally be started on a relatively small scale to do the procedures most widely accepted, but provision should always be made for expansion of services and personnel, for this is inevitable in a progressive institution.

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SPECIAL ARTICLE

MEDICAL ORGANIZATION IN NATIONAL CATASTROPHE

Melvin A. Casberg, M.D., Washington, D. C.

This report is concerned primarily with the standardization of surgical treatment of mass casualties in times of national catastrophe and certain organizational measures that are essential in effecting large-scale medical treatment. The responsibilities of our profession during times of disaster are grave, and the problems of organizing and directing the medical effort during such times are complex. To give some insight into the magnitude of this potential challenge to physicians, some of the surgical problems are reviewed.

In speaking of mass casualties, one enters a field that is foreign to the experience of American medicine, for our nation has never been confronted with the medical problems incident to the civilian catastrophe of modern total war. Nothing in our history has prepared us for the destructiveness of modern weapons, and even American civilian physicians who served in World War II had but little contact with the treatment of mass civilian casualties. Those who were experienced in these lines will find that advances in both weapons and treatment have caused changes in medical thinking during the past decade.

It is difficult to grasp the magnitude of this potential challenge to the medical profession unless one realizes the modern concept of warfare. Historically, wars were fought by conscriptive armies who bore the brunt of trauma and who only indirectly drew upon the energies of the civilian population that supported them. This concept has become totally obsolete, and modern warfare is a matter of total national output to prevent total national destruction; the efforts of the civilian members of our society are as essential to the survival of a nation as the efforts of the combat forces. This change in concept is due to the tremendous advances in technology of modern warfare as well as the intricacies of a modern society. For example, it may take one bomber with a crew of three men to annihilate a target and materially weaken the enemy's ability to carry on war; yet behind this one bomber there lie the efforts of hundreds and even thousands of persons who participated in the creation of this weapon, commencing with the raw products of its component parts and going on to the finished machine. Therefore, future warfare probably will not differentiate between the military and civilian population, because to destroy the source of this bomber is just as effective, if not more so, than to destroy the finished product. This makes the civilian population in future wars more vulnerable to attack and disaster than ever before in history, and we should never delude ourselves into believing that humanitarian considerations will save us from wilful destruction when the enemy's survival may depend on the annihilation of our ability to produce lethal weapons. Although we sincerely hope that such a grim state of affairs will never materialize, American medicine must be prepared to handle mass civilian casualties, because in the ability of medicine to restore its civilian element may rest the survival of our nation.

In looking toward methods of handling mass civilian casualties, it is only natural that one looks to the armed forces, for they more than any other branch of American medicine have had experience in such lines. In this respect, it is essential to emphasize that there is no fundamental dichotomy between civilian and military medicine. Medical lessons learned in the armed forces are fully applicable should the civilian rather than the soldier become a victim of modern warfare.

MOVING CASUALTIES

An example of knowledge gained by medicine in the armed forces that can be applied in times of need to civilian practice is that of moving casualties. Patient evacuation has been an extremely important factor in contributing to lower mortality and morbidity rates of soldiers wounded in action and in times of national catastrophe could equally serve the interests of civilian casualties if intelligently applied. The ubiquitous helicopter with its almost unlimited directional capacity for short flights as well as the transoceanic and transcontinental range of the larger planes have given the wounded two major lifesaving advantages, those of time and space, or in other words, early medical care in an environment best suited to bringing about recovery. On superficial consideration this factor of evacuation may not appear applicable to

Assistant Secretary of Defense (Health and Medical).

civilian catastrophe. Yet in the event of critical major disaster to our larger metropolitan areas with resultant devastation of buildings and utilities, it may become necessary to transport our civilian wounded to adjacent towns for medical care. This would require the establishment of a medical organization patterned after that of the armed forces in combat operations with effective triage and rapid evacuation of patients as well as mobility of professional personnel.

In the event of an atomic attack on our nation, the problem of enemy air strafing of ambulance planes probably would not complicate the evacuation of patients within our continent, so that the only limitations would be those of the availability of planes and their operational facilities. Certainly in the case of critical destruction of certain of our large metropolitan centers there would be a distinct advantage in the evacuation of patients to surrounding or more distant satellite unharmed communities where definitive or even emergency care could be administered under a more normal environment. Unless one actually has observed air evacuation in action, it is difficult to appreciate the comfort, speed, and numbers of patients thus transported. Commercial transport planes should have incorporated under their plush cabin fittings the necessary attachments to support stretchers should the necessity for such conversion arise. When this is done at the time of manufacture the cost is insignificant and the availability in the event of emergency almost immediate.

CONTROL OF PATIENT FLOW

The armed forces have learned the necessity for a regulating office responsible for the direction of "patient flow." Such an organization insures the smooth evacuation of the sick and wounded to facilities that, from the standpoint of space available and professional care, are capable of handling the casualty influx. This unit does not have clinical professional responsibilities as does the triage team but acts on submitted diagnostic information to maintain a constantly revised "patient flow chart." It goes without saying that an adequate communications system is essential to the success of such a project.

There is nothing that can upset supporting medical facilities as thoroughly as poor sorting or classification of the sick and injured. By the same token intelligent triage performed by professionally competent personnel can not only save lives but also contribute to the optimal use of health personnel and facilities. A certain degree of honest difference of opinion exists as to the placing of various categories of medical personnel in the theater of combat. Nevertheless there has developed during and since World War II a majority opinion that a high level of professional competence must be located in close support of the line of combat. In an atomic disaster in this country one would not be faced with the problem of exposing professional personnel to continued enemy action, as is usually the case in combat situations; thus, this problem would not impose serious restrictions in the placing of health personnel at the site of disaster. This does not imply that the health professions are any more or less averse to exposure to danger but rather that, as is the case in war, this nation cannot jeopardize a critical personnel element without just cause.

Intelligent clinical judgment in the evaluation of the injured at forward echelons near the site of an atomic explosion will lessen the load imposed on the evacuation system by eliminating those with minor injuries and by the same token prevent an overcrowding of hospital facilities to the rear. Good professional judgment will make it possible to hasten the evacuation of those needing immediate care and sidetrack those with less urgent medical needs. The correct functioning of the triage team is contingent on the competence of its professional members. It is possible for a skilled orthopedist or surgeon, without even handling a scalpel, to save many lives by the application of sound clinical judgment in the triage of patients. The triage team must be familiar with the capacity, location, and competence of various supporting medical elements in order to function effectively.

The armed forces have learned from experience the value of small mobile surgical teams, both general and special, as supporting units to the forward echelons. The mobility of these units makes it possible to fit them into the evacuation chain where the flow of casualties demands special attention. One of the more recent specialty organizations that has developed in the evolution of this program is that of the vascular surgical team, and by virtue of the critical nature of this particular problem such a team holds a high priority in the evacuation chain. Certainly those responsible for the civil defense medical organization of professional personnel would do well to plan for mobile surgical teams to operate when and where the necessity arose. Actually all medical units should be organized primarily on the basis of personnel composition rather than geographic assignment, inasmuch as the latter is determined to a considerable extent by the site of the atomic explosion. The armed forces medical units under combat conditions are designated numerically as professional composites and not geographically, thus attesting to their mobile nature and ability to fall readily into the pattern of patient flow.

STANDARDIZATION OF PROCEDURE

Standardization in the application of therapeutic principles is quite distasteful to most of the medical profession, for this procedure is usually tainted with the aroma of mental regimentation and the shackling of individual scientific resources. Furthermore, there frequently develops a certain degree of retardation in the flow of medical progress when therapy is limited to the narrow confines of standard orders of procedure. Nevertheless there are certain conditions under which mortality and morbidity rates may be improved by the application of standard therapeutic principles. These conditions or modifying factors usually are existent in the medical problems precipitated by total war or a catastrophe of similar magnitude.

Whereas in civilian medicine the patient usually remains under the care of a single physician, the complications of war or physical catastrophe necessitate a series of patient evacuations with a multiplicity of health personnel and a variety of professional competence responsible for the treatment of the wounded. Therapy initiated at a forward echelon of medical installations is continued along the chain of evacuation with a series of professional men and women each contributing to the eventual recov-

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ery of the patient. This situation precludes too great a latitude in individual choice lest initial therapy narrow the limits of ultimate definitive care to the patient's detriment. For example, though different methods of soft tissue wound therapy are advocated by competent medical authorities, all do not lend themselves equally well to the care of the soldier, sailor, or airman injured in line of duty. Though an individual medical officer may be desirous of using his particular therapeutic measure, he must learn to conform lest the initial local treatment set the course of future definitive care in a pattern foreign to the personnel and facilities available in the chain of evacuation.

WOUNDS OF THE EXTREMITIES

Experience during World War II [1] and the more recent Korean conflict has shown that 70% of combat wounds involved the extremities and with the introduction of the armored vest this percentage is rising to an even higher figure. In an atomic attack actual trauma aside from burns will be inflicted in great part by secondary missiles or flying debris due to blast effect and certainly the extremities will receive a high proportion of these injuries. While the 4% mortality rate from this category of combat wounds is comparatively low, we must not lose sight of the serious long range handicap resulting from ineffectual limbs and therefore must bring into play every available therapeutic procedure that can contribute to the early rehabilitation of the patient. Though not necessarily applicable to civil defense, it is of interest to note that since the use of armored protection of the thorax and abdomen the over-all mortality rates have been lowered; however, in respect to the multiple low velocity fragment wounds of the extremities the morbidity rates are actually increasing. This somewhat paradoxical situation has developed because previously patients who sustained multiple serious wounds of the limbs also sustained similar injuries of the body trunk and did not survive, whereas under present protective elements the combat soldier lives but often with seriously mangled extremities. In the light of the importance of this particular subject we might in the first place give consideration to certain more or less standard emergency therapeutic procedures directed toward rehabilitating those with injuries of the extremities. Frequently the initial care will either save a limb or militate against its survival as a functional unit.

Hemorrhage.—Hemorrhage from a wound of the extremity is usually controlled by pressure dressings. In general the tourniquet should be used infrequently. When, however, the application of a tourniquet is indicated to prevent life-endangering hemorrhage, only rarely should it be removed before the wounded man has been hospitalized where facilities and personnel are available for operative control of the hemorrhage and for adequate blood replacement. The time-honored custom still accepted by many that the tourniquet should be removed every 30 to 60 minutes in order to minimize chances of gangrene of the extremity is a fallacious concept, for only an injury to the major vessel is likely to require a tourniquet and the incidence of gangrene in these, particularly in the lower extremity, is high regardless of the emergency measure applied. Furthermore, removal of the tourniquet may facilitate another hemorrhage that in an already exsanguinated patient may very well prove lethal.

The tourniquet has enjoyed a rather fluctuating popularity, sometimes riding the very crest of acclaim and at other times settling low in the trough of discredit. To the medical novice in traumatic surgery nothing causes as much consternation as the sight of flowing blood, and there is usually present an irrepressible, almost involuntary, urge to staunch this leakage by whatever means available. Unfortunately under situations such as this the application of a tourniquet almost by historical precedence has become the standard procedure of choice. Without belaboring this criticism further, I cannot help but wonder about the number of limbs lost as a direct result of the injudicious application of this principle.

Fractures.—Management [1] of open or compound fracture of the extremities might well be divided into two basic phases; first, that applicable as the mission of the forward or combat zone and second, definitive care for which the base or general hospital must be responsible. The first phase mission is that of preventing infection and should be limited to thorough débridement or excision of the wound and adequate drainage, without closure, as well as immobilization, in order that pain and tissue damage may be minimized during transportation. Reduction should not be tried at this stage, and only gross malalignment is corrected at the time of splinting.

Devitalized tissues are excised in conjunction with liberal incisions of the skin and fascia, leaving in situ bone fragments with soft tissue attachments. These wounds are then left open unsutured and covered with petrolatum-impregnated fine mesh gauze. Tight packing of wounds is dangerous, but especially is this the case in wounds associated with fractures. Secondary closure of the wound uncomplicated by gross infection is usually performed four to six days after the initial débridement. This period may of necessity be prolonged in those soft tissue lacerations with or without underlying fractures where the evidence of gross infection remains obvious. One must remember that extension of the closure time beyond the six day period increases the fixation of the wound tissues and renders them less mobile and more difficult of apposition.

Methods of emergency splinting depend to a great extent on available facilities and individual preferences and, if adequate, do not necessarily adversely influence ultimate definitive therapy. The ideal transportation splint is the circular plaster cast, a method of equal value in the treatment of extensive soft tissue damage of the extremities without complicating fractures, when patients so afflicted must be transported with frequent handlings. Without exception every circular plaster cast, including the underlying sheet cotton padding, is split immediately after application.

The second phase in the care of the patient with an open fracture is the responsibility of the base or general hospital. Within a week after débridement, every plaster cast applied in the forward hospital is removed and the program of definitive care is initiated with the reduction and fixation of the fracture followed immediately or at an interval by a revision of the underlying wound. The

1. Hampton, O. P.: Wounds of the Extremities in Military Surgery, St. Louis, C. V. Mosby Company, 1951.

hanging cast or intramedullary nail affords a very acceptable mobile type of treatment for fractures of the humerus, whereas for fractures of the femoral shaft balanced suspension skeletal traction remains the most generally applicable method. However, intramedullary nailings of the broken femur even in the face of open wounds have yielded surprisingly good results in recent trials on our Korean casualties.

The intelligent primary management of the open wound of a joint is of great significance in the final functional result to be anticipated. Wide arthrotomy incision, through an area apart from the wound if indicated, with the excision of foreign bodies and devitalized articular cartilage and bone, followed by closure of the synovial membrane and capsule is the therapeutic method of choice. The remaining overlying soft tissues are closed secondarily several days later, as was discussed earlier. Immobilization of the joint is most important in the prevention of suppurative arthritis. The only joints left open for drainage are those hopelessly destroyed where one must anticipate a "frozen" functionless unit. In undébrided wounds of joints seen late and in established suppurative arthritis, the surgical procedure of choice remains the same; namely, intra-articular débridement and lavage, with closure of the synovial membrane and capsule. Needless to say the antibiotics play an important role in this therapeutic program.

There is no place for primary suture in the standard therapy of wounds of major peripheral nerve trunks, inasmuch as the definitive repair of severed nerves is not to be accomplished until the wound has healed and shown no evidence of infection for a period of at least three weeks. During the process of débridement nerve ends are neither to be tagged nor approximated by suture but rather are permitted to retract into protective soft tissue. Careful anatomical description of the findings at the original exploration are of inestimable value to the surgeon in the rear echelon of medical evacuation.

Wounds of major vessels of the extremities have always presented a serious problem to the military surgeon. Recent experiences in Korea are demonstrating the value of competent front line vascular surgical teams who with the use of both autogenous and homologous grafts have saved many limbs. Owing to the urgency of early and skilled care, such vascular wounds must have a high therapeutic priority. The accumulating rather favorable statistics may well lead to an acceptance of this apparent solution to an age-old problem as a standard approach to the care of wounds of major peripheral elements of the vascular system.

Amputation.—Early in World War II American forces accepted simple open circular amputation through the most distal level of viable tissue as the standard procedure of choice in the combat zone. The definitive plastic revision of the stump or reamputation at a more functional level was the responsibility of the rear fixed hospital. Once this method of standardized therapy became a routine order of procedure, many limbs and lives were saved. An integral, essential part of this treatment was the utilization of immediate and continuous skin traction plus the optimal splinting of the joint just proximal to the level of amputation.

BURNS

Among the many new problems that modern warfare has created for the military surgeon is that of large numbers of thermal burns, for combat techniques now include a great variety of situations that expose the participant directly to the actual flame. This difficulty is further compounded by the possibility of mass burn casualties over a relatively brief or almost instantaneous span of time. To appreciate the multiplicity of contributing factors, one has but to enumerate such relatively new instruments of war as the flame-thrower, napalm bomb, and atomic explosion, not to mention the constant dangers of such accidents as airplane crashes and fires aboard ship. Experiences from Hiroshima and Nagasaki have demonstrated the high incidence of thermal burns as a result of direct atomic flash exposure and of secondary fires.

The therapeutic challenge of burns has plagued military surgeons for many centuries, and it is only in very recent times that the seriously burned could be offered any hope of freedom from permanent disfigurement or of life itself. The great campaign surgeon Ambroise Paré writing in his diary gives us some insight into the hopelessness of the severely burned soldier in the 16th century. After describing the capture of a city he continues, "I entered a stable thinking to lodge my horse and that of my man, where I found four dead soldiers and three who were propped against the wall, their faces wholly disfigured, and they neither saw, nor heard, nor spoke, and their clothes yet flaming from the gunpowder which had burnt them. Beholding them with pity there came an old soldier who asked me if there was any means of curing them. I told him no. At once he approached them and cut their throats gently and without anger. Seeing this great cruelty, I said to him that he was a bad man. He answered me that he prayed God that when he should be in such a case, he might find someone who would do the same for him, to the end that he might not languish miserably."

The early management of the severely burned patient involves two major therapeutic phases, namely, the prevention and treatment of burn shock and the prevention of infection. The first phase must solve intelligently the problem of fluid and electrolyte balance, whereas the second phase, both by the use of aseptic techniques in handling of the open burn wound and by the maintenance of an adequate antibiotic blood level, must neutralize the hazards of infection. The later therapeutic procedures include skin grafting and other definitive plastic measures aimed at the total rehabilitation of the patient. Time does not permit an evaluation of the entire care of the burned patient. Inasmuch as the subject is standardization of therapeutic procedures, it might be well to direct attention to those facets that lend themselves to this approach and in which the ultimate definitive care might be jeopardized by inadequate or improper initial therapy.

Numerous formulas have been developed for the standardization of the approach to electrolyte and other blood-element imbalance precipitated by burn shock, most of which are calculated in relation to the percentage of total body surface burned. A simplified rule of nines

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for an approximate estimation of the body area involved states that each of the upper extremities comprise 9% of body surface, the head and neck 9%, each lower extremity 18%, and the anterior and posterior aspects of the combined thoracoabdominal trunk each 18%. Any patient sustaining more than 20% surface burn is likely to go into some degree of shock and arbitrarily a 40% or more burn is considered as extensive and severe.

Evans [2] has developed a rather typical standard formula that when applied to a man weighing 70 kg. with a 35% burn calculates the first 24 hour fluid requirement as a total of 6,900 cc. broken down as follows: plasma, plasma expanders, or whole blood (70 by 35 by 1 cc.) 2,450 cc.; electrolyte solutions as isotonic sodium chloride (70 by 35 by 1 cc.) 2,450 cc.; and 5% glucose in water 2,000 cc. Half this amount of plasma and/or whole blood and electrolyte and the same amount (2,000 cc.) of 5% glucose in water is given the second 24 hours. The experience of the traumatic shock research team in Korea has shown that, when the use of plasma expanders is necessary, best results have been obtained by the administration of one unit of dextran with each unit of whole blood. A word of caution is indicated in the administration of large amounts of chloride in extensive burns, and rarely should more than 4,000 cc. of isotonic sodium chloride solution be given in the first 24 hours. The electrolyte balance of the burned patient can usually be stabilized after the first 48 hours by adequate amounts of fluid and food by mouth. The utilization of such a formula in no wise relieves the attending physician from the responsibilities of the application of good clinical judgment but does afford a degree of standardization that in the face of mass casualties and multiple evacuations more accurately regulates the therapeutic program.

The treatment of the burn wound itself commences with the prevention of further contamination. After the shock therapy is under way and clinical evaluation of the patient indicates that additional insults to the body economy will not precipitate further complications, under sterile aseptic technique the burned areas are gently but thoroughly cleansed and débrided. There are two major therapeutic measures advocated for the care of burn wounds, each having the support of highly qualified scientists. One is known as the occlusive pressure dressing method described by Allen and Koch [3] and the other is the open or exposure treatment supported by Pulaski and his co-workers.[4] Most forms of burn therapy are modifications of these basic concepts.

The closed treatment involves the application of sterile fine mesh gauze, either dry or petrolatum-impregnated, against the raw surface of the wound, over which is added mechanic's waste or absorbent cotton to afford pressure or absorb exudate. A final outer layer of dressing is applied so as to exert mild pressure to the underlying wound. Advocates of the closed method of treatment argue that after cleansing of the wound, further contamination is minimized, a certain degree of optimal splinting is afforded, and that patients are transportable.

The open or exposure method of therapy lends itself best to partial thickness burns involving only one side of the body and to burns of the head and buttocks. The fact that cooperation of the patient is essential limits to some degree the application of this principle. One cannot help but be impressed by the role the exposure method of burn therapy may of necessity play in the event of large scale atomic attack where a limited supply of physicians may be called upon to handle thousands of severely burned patients. The many advantages that would accrue in the conservation of health personnel and time requirements under such a standard therapeutic procedure should not be underestimated.

ABDOMINAL WOUNDS

Though one cannot extrapolate combat statistics and apply them directly to expected atomic blast injuries, nevertheless certain valuable information can be gained from this experience.[5] Approximately 4% of all those wounded in action sustain injury to the abdomen, with an over-all mortality rate in these cases of 35%; furthermore 85% of abdominal wounds penetrate the peritoneal cavity. The two major factors complicating wounds in this region are those of infection and hemorrhage, the former in the great majority of instances being secondary to perforation of the intestinal tract. Statistics show that, of all combat abdominal wounds, 20% will be penetration of the small intestine and some 10% of the large intestine. In instances of colon injury the mortality rate remains around 50%. It is standard procedure to explore every penetrating wound of the abdomen that cannot be proved to have missed the peritoneum.

The adoption of certain standard surgical measures in the face of perforations of the large intestine are essential to the proper management of this most serious category of intestinal wounds. To save life, the most important facet of therapy is that of short-circuiting the large intestine contents in order that the injured segment not be subjected to the trauma of distension and peristaltic action. In wounds involving less than half of the bowel circumference, one may perform either a simple loop colostomy using the injured loop or close the perforation and create a proximal colostomy. Where the wound is greater than half the circumference of the colon, the damaged portion is resected and a double barrel Mikulicz colostomy performed. Penetrating rectal and anal wounds, however innocuous they might appear, necessitate a laparotomy; should a perforation be discovered above the sphincter, a sigmoid colostomy is indicated. If at all possible, the wound area and operative incision are to be avoided as colostomy sites.

Injury to the liver is seen in 30% of combat abdominal wounds and carries with it a mortality rate of 18% if this is the sole viscus involved. Various methods of repair utilizing techniques of mattress sutures and absorbable packing are equally efficient; however, the damaged area is always drained. Unless this standard of procedure is studiously observed, a variety of complications secondary to bile and blood seepage are bound to occur.

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2. Evans, E. I.: The Early Management of the Severely Burned Patient, Surg., Gynec. & Obst. 94: 273, 1952.
3. Allen, H. S., and Koch, S. L.: The Treatment of Patients with Severe Burns, Surg., Gynec. & Obst. 74: 914, 1942.
4. Pulaski, E. J., and others: Exposure (Open) Treatment of Burns, U. S. Armed Forces M. J. 2: 769, 1951.
5. Surgery of Trauma, Bowers, W. F., editor, Philadelphia, J. B. Lippincott Company, 1953. Beebe, G. W., and De Bakey, M. E.: Battle Casualties: Incidence, Mortality, and Logistic Considerations, Springfield, Ill., Charles C Thomas, Publisher, 1952.

The spleen is injured in 7% of all combat abdominal wounds, though it is involved alone in only approximately 2% of cases. In the latter situation there is a mortality rate of 13%. The procedure of choice in all but superficial abrasions is immediate splenectomy, for temporizing may lead to delayed and fatal hemorrhage from a subcapsular hematoma.

Some 10% of those wounded in action sustain injuries of the chest. These combat statistics are expected to change as more experience is gained in the utilization of the armored vest. Thoracic wounds present a twofold problem, the first being that of a disturbed cardiorespiratory physiology and the second that of infection. The immediate and correct handling of chest wounds frequently spells the difference between life and death especially, as this pertains to the correction of respiratory imbalance. Open pneumothorax with the oft-described "sucking wound" necessitates prompt closure with a gauze compress or pack held in place by adhesive plaster. Suturing of such a wound preferably is delegated to a surgical team by whom adequate débridement and accurate closure can be accomplished.

Pressure pneumothorax is another complication of chest wounds requiring early attention. The relief of this situation is simple and effective if applied promptly and consists of the insertion into the pleural cavity of a catheter with a water seal valve or a needle with a rubber flutter valve. Repeated aspirations of the pleural cavity by a needle removing air and blood will aid in the maintenance of proper respiratory balance.

Supplementing the procedures directed at the specific situations described above are equally important therapeutic measures such as frequent tracheobronchial aspirations removing blood and mucous collections, administration of oxygen, transfusions when indicated, and the routine performance of tracheotomies in the unconscious patient with serious chest injury. Standardization of this early care has resulted in the saving of many lives and the improvement of morbidity rates.

Definitive care for the patient with a chest wound is carried out by competent thoracic teams not the least important member of which is a well-trained and efficient anesthesiologist. Blood clot and congealed purulent exudate that no longer yield to the aspirating needle will necessitate thoracotomy and decortication of the lung to permit satisfactory pulmonary expansion.

MAINTENANCE OF RECORDS

The absolute necessity for the maintenance of brief and yet accurate medical emergency records on all casualties is of paramount importance. To meet the standards of practicality such a system requires advance planning, simplicity in accomplishment, and the indoctrination of physicians as to the value of this procedure to the eventual welfare of the patient. Anyone who has functioned as a medical officer in the chain of patient evacuation will attest to the sense of therapeutic frustration developed by inadequate recordings of emergency care. In the event of radiation exposure, there are additional data that only the person administering initial care will be able to record with any degree of accuracy. Among these is the geographic relationship to ground zero at the time of exposure.

SUMMARY

The purpose of this paper is to present certain qualifying factors that modify the application of medicine to combat or catastrophic situations and to point out the possible benefits that will accrue as civilian physicians share the experiences of the armed forces in medical organization applicable to the care of mass casualties.

Mission Dr., Solvang, Calif.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Tetraethylammonium Chloride.—Etamon Chloride (Parke, Davis).—$C_8H_{20}ClN$.—M.W. 165.71.—Tetraethylammonium chloride is made in the form of a 50% solution in water. From this solution the dosage forms are prepared. The structural formula of tetraethylammonium chloride may be represented as follows:

$$(C_2H_5)_4N^+ \cdot Cl^-$$

Actions and Uses.—Tetraethylammonium chloride is a quaternary ammonium compound belonging to a class of drugs that, like nicotine and curare, act as generalized ganglionic blocking agents. The drug partially blocks transmission of motor nerve impulses through the ganglia of both the sympathetic and parasympathetic divisions of the autonomic nervous system. Its action is not adrenolytic and is interrupted by neostigmine. The blocking of sympathetic stimuli associated with vasospasm usually results in an increased blood supply to the affected region, accompanied by reduction in arterial pressure due to vasodilation. The simultaneous interference with the transmission of parasympathetic impulses produces loss of ocular accommodation, cessation or decrease of motility of the gastrointestinal tract, and alteration of urinary bladder function.

Tetraethylammonium chloride is of limited clinical usefulness as a therapeutic and diagnostic agent in the management of peripheral vascular diseases and other conditions involving vascular dysfunction. It has been employed successfully in the therapy of thromboangiitis obliterans (Buerger's disease), arteriosclerosis obliterans, various causalgias including reflex dystrophy, herpes zoster, thrombophlebitis, Raynaud's disease, acrocyanosis, trenchfoot, and immersion foot. It may be employed diagnostically in acrovascular conditions to estimate the contribution of sympathetic stimuli in the maintenance of vasospasm.

Tetraethylammonium chloride promptly lowers blood pressure in both normal and hypertensive patients. Peripheral circulatory collapse has followed its use. Patients occasionally also experience dyspnea with hyperventilation, weakness, fatigue, lightheadedness, slowing of speech, dulling of the sensorium, difficulty in muscle movement that is not associated with impairment of the deep reflexes, dryness of the mouth, and loss of ocular accommodation. The drug should be employed with caution in patients with severe hypertension, particularly in the presence of poor renal function or high diastolic blood pressure. Repeated administration should be avoided in the presence of impaired renal excretion. Tetraethylammonium chloride is not suitable for the treatment of hypertension because its hypotensive effect is not sustained. It

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should not be used in patients with recent coronary thrombosis and should be used with caution in all elderly patients and those with arteriosclerosis because they often experience unusual decrease in blood pressure with diminution in blood flow through the extremities.

Dosage.—Tetraethylammonium chloride is administered by intravenous or intramuscular injection. Intramuscular injection produces local tenderness and burning. Subcutaneous injection produces considerable local irritation and oral administration is ineffective.

The intravenous dose is 2 to 5 cc. of a solution representing 0.2 to 0.5 gm. (not to exceed 7 mg. per kilogram of body weight). Frequency of injection depends on duration of relief of symptoms. The effectiveness of the dose can be judged properly only on the basis of three or more injections. Injections may be given once or twice daily for several weeks in exceptional cases. The effects of the drug appear almost immediately after intravenous administration and postural hypotension lasts from several minutes to one hour. Patients should be kept recumbent for at least one hour after intravenous injection.

The intramuscular dose is 10 to 12 cc. (5 to 6 cc. in each buttock) of the same concentration as that used intravenously, representing 1 to 1.2 gm. (not to exceed 20 mg. per kilogram of body weight). This maintains an effective sympathetic block for 6 to 36 hours in hospitalized patients. Continuation of the autonomic blockade for longer than 36 hours usually causes considerable distress. Addition of 1 cc. of 2% procaine hydrochloride solution to the dose of tetraethylammonium chloride decreases the discomfort caused by intramuscular injection.

Peripheral circulatory collapse should be treated by artificial respiration and/or injection of epinephrine hydrochloride solution 1:1,000. Intravenous administration of 0.5 to 1 mg. of neostigmine methylsulfate in solution antagonizes the blocking action of tetraethylammonium chloride and promotes rapid recovery from the postural hypotension.

Tests and Standards.—

The following tests and standards apply to the 50% aqueous solution of tetraethylammonium chloride.

Physical Properties: Tetraethylammonium chloride, isolated by evaporating the 50% solution in a vacuum, is an extremely hygroscopic, odorless, white solid. It is very soluble in water and in alcohol, freely soluble in chloroform, and practically insoluble in benzene and in ether. The pH of the 50% solution is 5.8 to 6.5.

Identity Tests: To 1 ml. of the 50% solution of tetraethylammonium chloride add 10 ml. of water, 0.5 ml. of diluted nitric acid, and 1 ml. of silver nitrate T.S.: a white precipitate forms that dissolves in 10 ml. of ammonium hydroxide T.S. (*presence of chloride*).

Shake about 1 gm. of ammonium reineckate with 25 ml. of water. Filter the mixture and add 5 ml. of the clear solution to 5 ml. of the 50% solution of tetraethylammonium chloride: a pink precipitate forms.

To 3 ml. of the 50% solution of tetraethylammonium chloride add 10 ml. of a saturated alcoholic solution of picric acid (1 gm. in 12 ml.): a fine, yellow, crystalline precipitate forms. Filter the mixture and wash the precipitate with 3 ml. of isopropyl alcohol and dry it at 105° for 4 hours: the picrate obtained melts (*Caution!* May be explosive. Use safety glass shield) with decomposition at 257-260°.

Purity Tests: The amount of triethylamine hydrochloride found in the assay is not more than 0.5%.

With water dilute to 50 ml. exactly 1 ml. of the 50% solution of tetraethylammonium chloride and on this solution run a U. S. P. heavy metals test: the amount of heavy metals does not exceed 20 ppm.

Evaporate in a platinum crucible 2 ml., accurately measured, of the 50% solution of tetraethylammonium chloride. Carefully ignite, cool, and weigh: the residue does not exceed 0.1%.

Assay: (Tetraethylammonium Chloride) Accurately measure into a 200 ml. volumetric flask 1 ml. of the 50% solution of tetraethylammonium chloride, and add 50 ml. of water and exactly 50 ml. of 0.1 *N* silver nitrate. Acidify the mixture with 3 ml. of nitric acid, agitate it until the precipitate coagulates and the supernatant liquid is clear, dilute to the mark with water, and mix. Filter the mixture through dry filter paper. Discard the first 20 ml. of filtrate and titrate exactly 100 ml. of the subsequent filtrate with 0.1 *N* potassium thiocyanate, using 2 ml. of ferric ammonium sulfate T.S. as an indicator. Each milliliter of 0.1 *N* silver nitrate consumed is equivalent to 0.003546 gm. of chloride and to 0.01657 gm. of tetraethylammonium chloride plus triethylamine expressed as tetraethylammonium chloride (total amines).

Accurately measure into a 400 ml. beaker 10 ml. of the 50% solution of tetraethylammonium chloride and dilute it with 190 ml. of alcohol. Run a potentiometric titration with 0.1 *N* sodium hydroxide, using a glass electrode. Run a blank titration on 190 ml. of alcohol. Each milliliter of 0.1 *N* sodium hydroxide consumed is equivalent to 0.01376 gm. of triethylamine hydrochloride that in turn is equivalent to 0.01656 gm. of tetraethylammonium chloride.

Subtract the amount of tetraethylammonium chloride equivalent to the triethylamine from the value for total amines to get the amount of tetraethylammonium chloride itself. The amount of tetraethylammonium chloride is not less than 47.5 nor more than 52.5%, equivalent to not less than 95.0 or more than 105.0% of the labeled amount of tetraethylammonium chloride.

Dosage Forms of Tetraethylammonium Chloride

SOLUTIONS. *Physical Properties:* The pH of the 10% solution is 5.8 to 6.5.

Identity Tests: The solution responds to the reineckate and picrate identity tests for the 50% solution in the monograph for tetraethylammonium chloride.

Assay: (Tetraethylammonium Chloride) Transfer to a 200 ml. volumetric flask a volume of solution, accurately measured, equivalent to about 0.5 gm. of tetraethylammonium chloride. Add 50 ml. of water and exactly 50 ml. of 0.1 *N* silver nitrate. Proceed as directed in the assay for the 50% solution in the monograph for tetraethylammonium chloride starting with, "Acidify the mixture with 3 ml. of nitric acid, agitate it until the precipitate coagulates . . ." Each milliliter of 0.1 *N* silver nitrate consumed is equivalent to 0.01657 gm. of tetraethylammonium chloride (total amines).

Transfer to a 400 ml. beaker a volume of solution, accurately measured, equivalent to about 5 gm. of tetraethylammonium chloride and dilute it with 190 ml. of alcohol. Run a potentiometric titration with 0.1 *N* sodium hydroxide, using a glass electrode. Run a blank titration on 190 ml. of alcohol. Each milliliter of 0.1 *N* sodium hydroxide consumed is equivalent to 0.01376 gm. of triethylamine hydrochloride, which in turn is equivalent to 0.01656 gm. of tetraethylammonium chloride.

Subtract the amount of tetraethylammonium chloride equivalent to the triethylamine hydrochloride from the value for total amines to get the amount of tetraethylammonium chloride itself. The amount of tetraethylammonium chloride is not less than 95.0 or more than 105.0% of the labeled amount.

Parke, Davis & Company, Detroit.

Solution Etamon Chloride 10%: 20 cc. Steri-Vials. A solution containing 0.1 gm. of tetraethylammonium chloride in each cubic centimeter. Preserved with 0.005% benzethonium chloride. U. S. trademark 432,476.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

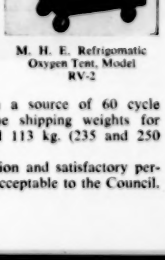
The following additional product has been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

M. H. E. Refrigomatic Oxygen Tents, Models RV-2 and RV-3

Modern Hospital Equipment, Inc., 119 N. Fourth St., Minneapolis 1.

The M. H. E. Refrigomatic Oxygen Tent consists of two principal parts: a canopy of transparent material to be suspended over the patient's bed and a cabinet housing the machinery for humidifying, cooling, and circulating the oxygen.



M. H. E. Refrigomatic Oxygen Tent, Model RV-2

The cabinet is mounted on large casters so that it can be rolled alongside the bed; it measures 84 (height) by 71 by 46 cm. (33 by 28 by 18 in.). Model RV-2 weighs 87 kg. (191 lb.); Model RV-3 weighs 93 kg. (206 lb.).

The models differ in the motor-compressor units. Model RV-2 has a one-fifth horsepower compressor, and its motor draws 650 watts. Model RV-3 has a one-third horsepower compressor, and its motor draws 860 watts. Both units require a source of 60 cycle alternating current at 115 volts. The shipping weights for Models RV-2 and RV-3 are 107 and 113 kg. (235 and 250 lb.), respectively.

Evidence indicating sound construction and satisfactory performance was obtained from sources acceptable to the Council.

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THE HAND AND CARDIOVASCULAR DISEASE

Despite widespread and sometimes unnecessary use of numerous laboratory tests in day-by-day clinical practice, diagnostic methods that require no special apparatus and that depend only on simple observation can play an effective role in obtaining clinical information about patients. In this connection, the human hand is a unique organ from which an extraordinary amount of clinical information may be derived. According to Silverman and Littman,[1] examination of the hand will often disclose interesting and occasionally revealing information about the cardiovascular status of patients. In a general way, the size of the hand is proportional to the rest of the body, and a rough approximation of the cardiac silhouette is obtained by examination of the size of the fist.[2] Under normal conditions the outline of the fist and the orthodiagraphic silhouette coincide, a small fist usually indicating a small heart.

Excessive palmar sweating constitutes one of the more striking findings in neurocirculatory asthenia. Sweating of the palms reflects emotional activities; it is increased during tension and excitement, although some degree of palmar sweating does occur in normal persons who are in a state of anticipation. A tremor of wide amplitude may also be detected in patients afflicted with neurocirculatory asthenia. The combination of excessive palmar sweating and a pronounced tremor of the outstretched fingers is a frequent finding in neurocirculatory asthenia and almost never takes place in normal persons.

Cyanosis and clubbing of the fingers have long been associated with congenital heart disease. Clubbing of the fingers does not appear at birth and very rarely before the age of 2 years; however, when congenital heart disease is suspected, alert clinicians search for associated congenital anomalies. Polydactyly and syndactyly, for example, may be associated with congenital heart disease. Moreover, arachnodactyly, which is characterized by abnormally long, slender fingers, is a hereditary disorder in which there is a high incidence of cardiovascular anomalies, including septal defects, vascular hypoplasia, and medionecrosis of the aorta.

Study of the hand is especially rewarding in the case of subacute bacterial endocarditis. Diagnosis of this disease is sometimes established initially by information supplied solely by the hand. According to Libman,[3] a diagnostic sign pathognomonic of subacute bacterial endocarditis is supplied by the so-called Osler node, which consists of a small, tender red nodule located in the pads of the finger or in the thenar or hypothenar eminences. Pallor is a more or less constant finding in subacute bacterial endocarditis; the degree of pallor can be determined by observing the color of the palms. Wintrobe [4] asserts that the palmar site is more reliable for judging pallor than mucous membranes or conjunctivas.

A clue to the existence of endocrine disturbances is also supplied by the hand. In hyperthyroidism, the hands are tremulous, flushed warm and moist, with the skin smooth and satiny; in hypothyroidism, the hands are dry, rough, and cold. The hand of a cretin is characteristically underdeveloped, while the hand of an acromegalic person is large, broad, and usually coarse and swollen.

The shoulder-hand syndrome is a disabling complication of myocardial infarction, which is characterized initially by a great deal of pain, stiffness, and limitation of motion of the shoulder joint and girdle, and is followed by involvement of the hands and fingers. Two signs of the hand suggestive of disturbance in liver function are thought to occur: erythema of the palms and spider angiomas or pulsating vascular nevi. Raynaud's syndrome primarily involves the fingers, while in advanced congestive heart failure the hands are invariably cold, the veins on the dorsum engorged, and the fingernail-bed cyanotic.

Finally, it should be pointed out that the hands are admirably suited for study of the dynamics of peripheral circulation.[5] As a matter of practical importance, the color and temperature of the skin of the hands sometimes yield more information of impending shock than either the pulse or the blood pressure. Indeed, a warm, pale hand abruptly changing in appearance during illness to a cold, deeply colored, cyanotic state supplies dramatic evidence of peripheral circulatory failure.

1. Silverman, J. J., and Littman, D. S.: The Cardiologist Looks at the Hand, New England J. Med. **249**: 839, 1953.
2. Roesler, H.: Clinical Roentgenology of the Cardiovascular System: Anatomy, Physiology, Pathology, Experiments and Clinical Applications, Springfield, Ill., Charles C Thomas, Publisher, 1937.
3. Libman, E., cited by Friedberg, C. K.: Diseases of the Heart, Philadelphia, W. B. Saunders Company, 1949.
4. Wintrobe, M. M.: Clinical Hematology, ed. 3, Philadelphia, Lea & Febiger, 1951.
5. DiPalma, J. R.: Circulation in Skin in Shock Syndrome: Comparison of Simple Prognostic Features of Clinical Value, J. A. M. A. **123**: 684 (Nov. 13) 1943.

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CHILDREN AS SURGICAL PATIENTS

The reactions of children who become surgical patients in a hospital for the first time vary considerably. Older children, especially those over 5 years of age, seem to forget the stay in a hospital quickly, while those under 5 years are more likely to show transient behavior changes—fear of the dark, fear of being left alone, and such regressive behavior phenomena as bed wetting, wanting to be fed, and fear of doctors and nurses. Disobedience, temper tantrums, increasing dependency, and spiteful, defiant behavior are more likely to occur in older children.

According to Mac Keith,[1] the three principal anxieties that concern children who are admitted to a hospital for the first time deal with separation from the home, the nature of the anesthetic, and the operation itself. While older children usually regard separation from a home environment to be temporary, younger children occasionally react in a highly charged manner. Very young children sometimes feel so lonely and deserted that they do not appear to pay too much attention to the operation itself; this is true of children who remain in a hospital environment for a period longer than was originally anticipated. In some instances, children develop fantastic notions about operative and anesthetic procedures and display unrestrained consternation regarding what will be done to them while they are under the influence of an anesthetic agent.

In the case of tonsillectomy, Coleman [2] proposes that a child who is to be subjected to this procedure be given a forthright explanation of the reasons for the operation; that a recognizable word-picture be drawn of the hospital, the operation, the nurse, and doctors; that an explanation be made, pointing out that the purpose of anesthesia is to relieve the child of pain during the operation; and that the parents be urged to reassure the child and display affection for him during the postoperative period. Before the operation, a very young child who brings along a familiar toy, a pair of slippers, or a pillow on admission to the hospital creates a tangible tie with his home. The admittance of a child to a hospital some 24 hours before an operation will often enable him to overcome a sense of initial panic and thereby afford him an opportunity to establish amicable relations with his fellow patients and with nurses and doctors.

Parents can play an extremely important role in preparing the child psychologically and emotionally before admission to the hospital. Actually, it is important that all three—mother, father, and child—know in a general way what will ensue in the hospital. The parents should possess sufficient information in order to answer those questions the child is certain to ask. Parents, and mothers particularly, need guidance in preparing a child for a hospital experience. A gigantic step forward in terms of parental education could be taken if the medical profession together with hospitals would routinely issue instructional leaflets to parents of children who are about to become surgical patients.

NOCTURNAL ENURESIS

Enuresis is a major problem, involving about 16% of the population between the ages 3 to 15 years. A solution is necessary for the social adjustment of the child, and those few persons in whom enuresis persists into adult life are truly handicapped. Anatomic or physiological abnormalities are present in only about 3% of those affected,[1] and since these can be treated by specific measures they do not enter into the present discussion. In any child, if bladder control is not accomplished by the time he has reached the age of 3½ years, training is likely to be difficult.

The causes proposed for nocturnal enuresis are varied and range from laziness to psychic disturbances. Holt and Holland state that bedwetting is purely a habit often associated with other habits that go with an unstable personality. Grulee and Eley say that a strong familial tendency is commonly observed in these patients and that they maintain an irritable bladder throughout life even though they are no longer enuritic. Turton and Spear [2] obtained electroencephalograms on 100 enuritic children and found 22 with epileptiform tracings, 28 with immature tracings, and 23 whose tracings were on the borderline of abnormality. They concluded that many enuritics who do not respond to treatment have an unsuspected physical basis for their disorder and that the electroencephalogram is of aid in the diagnosis.

Because the desire to urinate depends on the pressure within the bladder rather than on the amount of fluid O'Malley and Owens [3] used methantheline (Banthine) to inhibit the local reflex vesical spasm and found that with this treatment the bladder could accommodate more fluid without an increase in intravesicular pressure. A noteworthy concomitant of this treatment was the psychological relief and increased self-confidence of the child. Some of their patients required a second course of the drug, but none required a third course.

Geppert,[1] on the other hand, has had successful results in 91% of a series of 42 children treated by conditioned response after restriction of fluid intake and rewards had failed. The method is cumbersome in that it requires special equipment and its success depends on careful observation of the details of the technique and close supervision by the parents. The patient sleeps on a moisture sensitive bed pad that is connected to an electric alarm. A moist spot the size of a silver dollar will set off the alarm. The child must be thoroughly wakened and must empty his bladder. The pad must then be replaced with a dry one and the alarm reset. The author found that sporadic bedwetters were the slowest to respond and that their progress was hardest to gage. The chief cause of failures was poor parental cooperation.

1. Mac Keith, R.: Children in Hospital: Preparation for Operation, Lancet **2**: 843 (Oct. 24) 1953.
2. Coleman, L. D.: Psychosomatic Aspects of Diseases of the Ear, Nose and Throat, Laryngoscope **59**: 709 (July) 1949.

1. Geppert, T. V.: Management of Nocturnal Enuresis by Conditioned Response, J. A. M. A. **152**: 381-383 (May 30) 1953.
2. Turton, E. C., and Spear, A. B.: E.E.G. Findings in 100 Cases of Severe Enuresis, Arch. Dis. Childhood **28**: 316-320 (Aug.) 1953.
3. O'Malley, J. F., and Owens, R. H.: Banthine Therapy for Enuresis, J. Missouri M. A. **50**: 188-189 (March) 1953.

ORGANIZATION SECTION

LEGISLATIVE REVIEW

(First Session, 83rd Congress)

Following is a résumé of the major legislative measures with medical implications that were introduced during the first session of the 83rd Congress. Identical House and Senate bills have not been indicated. The listing, which shows the bill numbers, authors, interested congressional committees, purposes, and position of the American Medical Association, if any, has been broken down under the following general subjects: (1) members of armed services and their dependents, (2) veterans and veterans administration, (3) medical research and establishment of medical foundation, (4) federal subsidization of education, (5) tax relief, (6) social security and disability insurance, (7) federal subsidization of private health insurance plans, (8) aid to the handicapped, and (9) miscellaneous. The action indicated in the last column is that taken by the Board of Trustees unless otherwise specified. Action by the Committee on Legislation is indicated when taken too recently for confirmation by the Board of Trustees. If additional information concerning the purposes of these bills or the basis for the position adopted by the Association is desired, a request should be addressed to the Committee on Legislation, 535 North Dearborn Street, Chicago 10, Ill.

C. JOSEPH STETLER, *Secretary.*

Members of Armed Services and Their Dependents

Bill No.	Introduced by	Congressional Committee	Subject or Purpose	Association Action and Date
S. 33	McCarran, Nev.	Armed Services, Senate	To provide hospitalization and medical care for members of Coast Guard and their dependents in military facilities	Opposition (active) 4/20/53
S. 70 *	Young, N. D.	Armed Services, Senate	To allow credit under "Doctor-Draft" law for service with countries that were allies of U.S. during World War II	Approval (active) 2/6/53
S. 1494	Potter, Mich.	Armed Services, Senate	Crediting internment time during World War II for purposes of "Doctor-Draft" law	No action 6/4/53
S. 1495	Murray, Mont.	Labor and Public Welfare, Senate	Emergency maternity and infant care program	Opposition (active) 6/4/53
S. 1531 †	Saltonstall, Mass., and Hunt, Wyo.	Armed Services, Senate	Amend and extend "Doctor-Draft" law	Approval, with amendments, 4/20/53
S. 1531 * Amendment	Hunt, Wyo.	Armed Services, Senate	Amendment to "Doctor-Draft" law re extension of $100 per month "special pay"	
H.R. 97 *	Burdick, N. D.	Armed Services, H.R.	To allow credit under the "Doctor-Draft" law for service with countries that were allies of U. S. during World War II	Approval (active) 4/20/53
H.R. 173	Rivers, S. C.	Armed Services, H.R.	To provide hospitalization and medical care for dependents of members of armed services in military facilities	Opposition (active) 2/6/53
H.R. 2432	Boggs, La.	Armed Services, H.R.	Dispensary treatment and hospitalization for retired enlisted military personnel in military installations	Opposition (active) 4/20/53
H.R. 2756	Seely-Brown, Conn.	Armed Services, H.R.	To provide hospitalization and medical care for members of Coast Guard and their dependents in military facilities	Opposition (active) 4/20/53
H.R. 2955 *	Judd, Minn.	Armed Services, H.R.	To allow credit under "Doctor-Draft" law for previous service in nonmedical status	Approval (active) 4/20/53
H.R. 4390	Budge, Idaho	Armed Services, H.R.	Crediting internment time during World War II for purposes of "Doctor-Draft" law	No action 6/4/53
H.R. 4447	Bolton, Ohio	Armed Services, H.R.	Appointment of male nurses in U. S. Army Reserve	No action 6/4/53
H.R. 4495 ‡	Short, Mo.	Armed Services, H.R.	Amend and extend "Doctor-Draft" law	Approval, with amendments, 4/20/53
H.R. 4642	Bosch, N. Y.	Armed Services, H.R.	Emergency maternity and infant care	Opposition (active) 6/4/53
H.R. 5017	Short, Mo.	Armed Services, H.R.	Appointment of osteopaths in Medical Corps of Army, Navy, and Air Force	Opposition 10/22/53

Veterans and Veterans Administration

S. 370	Murray, Mont.	Labor and Public Welfare, Senate	Construction of additional Veterans Administration hospitals	Opposition (active) 4/20/53
S. 609	Sparkman, Ala.	Finance, Senate	Presumption of service connection for chronic and tropical diseases	Opposition (active) 4/20/53
S. 762	Martin, Pa.	Finance, Senate	Presumption of service connection for tuberculosis, multiple sclerosis, and psychosis	Opposition (active) 4/20/53
S. 1068	Griswold, Neb., and Ives, N. Y.	Labor and Public Welfare, Senate	Hospital care and medical treatment for veterans residing abroad	Opposition 6/4/53
H.R. 25	Rogers, Mass.	Veterans' Affairs, H.R.	Presumption of service connection for chronic and tropical diseases	Opposition (active) 4/20/53
H.R. 28	Rogers, Mass.	Veterans' Affairs, H.R.	Construction of additional Veterans Administration hospitals	Opposition (active) 4/20/53
H.R. 33	Rogers, Mass.	Veterans' Affairs, H.R.	Presumption of service connection for tuberculosis, psychosis, and multiple sclerosis	Opposition (active) 4/20/53
H.R. 35	Rogers, Mass.	Veterans' Affairs, H.R.	Hospital care and medical treatment for disabled veterans visiting or residing abroad	Opposition 4/20/53
H.R. 45	Rogers, Mass.	Veterans' Affairs, H.R.	Presumption of service connection for malignant tumors	Opposition (active) 4/20/53
H.R. 46	Rogers, Mass.	Veterans' Affairs, H.R.	Presumption of service connection for tuberculosis for World War II veterans	Opposition (active) 4/20/53
H.R. 54	Rogers, Mass.	Veterans' Affairs, H.R.	To authorize appointment of chiropractors in Veterans Administration	Opposition (active) 4/20/53
H.R. 338	Rogers, Mass.	Veterans' Affairs, H.R.	To authorize outpatient treatment by Veterans Administration for non-service-connected disabilities	Opposition (active) 4/20/53
H.R. 1414	Rogers, Mass.	Veterans' Affairs, H.R.	To provide interchange of hospital facilities between Veterans Administration and Department of Defense	Approval 4/20/53

* Subject of bill included in Public Law 81, 83rd Congress, June 29, 1953.
† Identical with H.R. 4495 enacted into Public Law 81, 83rd Congress, June 29, 1953.
‡ Enacted into Public Law 81, 83rd Congress, June 29, 1953.

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Veterans and Veterans Administration—Continued

Bill No.	Introduced by	Congressional Committee	Subject or Purpose	Association Action and Date
H.R. 2097	Hagen, Minn.	Veterans' Affairs, H.R.	Presumption of service connection for pulmonary tuberculosis	Opposition (active) 4/26/53
H.R. 2573	Rogers, Mass.	Veterans' Affairs, H.R.	Extension of hospital care for veterans of Spanish-American War	Opposition (active) 4/26/53
H.R. 2980	Rogers, Mass.	Veterans' Affairs, H.R.	To authorize appointment of optometrists in Veterans Administration	Opposition 4/26/53
H.R. 3070	Frelinghuysen, N. J.	Veterans' Affairs, H.R.	Presumption of service connection for amyotrophic lateral sclerosis	Opposition (active) 4/26/53
H.R. 4661	Teague, Texas	Veterans' Affairs, H.R.	Amendment to law authorizing hospitalization and medical care for veterans with non-service-connected disabilities	Opposition (active) 6/4/53
H.R. 5012	McCarthy, Minn.	Veterans' Affairs, H.R.	Presumption of service connection for pulmonary tuberculosis and multiple sclerosis	Opposition (active) 10/22/53
H.R. 5636 §	Radwan, N. Y.	Veterans' Affairs, H.R.	Presumption of service connection for all types of tuberculosis	
H.R. 5892	Rogers, Mass.	Veterans' Affairs, H.R.	To increase federal contribution to state and territorial homes for veterans' care	Opposition (active) 10/22/53
H.R. 5893	Rogers, Mass.	Veterans' Affairs, H.R.	Medical care for retired military personnel	Approval 10/22/53
H.R. 6015	Teague, Texas	Veterans' Affairs, H.R.	Amend existing law relative to hospitalization and medical care of veterans	Opposition 10/22/53
H.Res. 140	Kelly, N. Y.	Rules, H.R.	Investigation of Veterans Administration	Approval (active) 4/26/53

Medical Research and Establishment of Medical Foundation

S. 156	Langer, N. D.	Labor and Public Welfare, Senate	Establishment of National Epilepsy Institute	Opposition (active) 4/26/53
S. 188	Neely, W. Va.	Labor and Public Welfare, Senate	Federal subsidization of cancer research	Opposition (active) 4/26/53
S. 977 ‖	Smith, N. J., and Aiken, Vt.	Labor and Public Welfare, Senate	Provision of additional funds to National Science Foundation	
H.R. 583	Rooney, N. Y.	Foreign Affairs, H.R.	Federal subsidization of cancer research	Opposition (active) 4/26/53
H.R. 2290	Morrison, La.	Interstate and Foreign Commerce, H.R.	Establishment of National Institute for Poliomyelitis	Opposition (active) 4/26/53
H.R. 4689 ¶	Wolverton, N. J.	Interstate and Foreign Commerce, H.R.	To amend the National Science Foundation Act of 1950	
H.J.Res. 166	Hinshaw, Calif.	Rules, H.R.	Establishment of Joint Committee on Science	No action 4/26/53
H.Res. 286	Metcalf, Mont.	Rules, H.R.	To study ways of preventing and controlling silicosis	No action 10/22/53

Federal Subsidization of Education

S. 461	Humphrey, Minn.	Labor and Public Welfare, Senate	Federal aid for public health education	Opposition (active) 4/26/53
S. 1515 $	Hunt, Wyo., and 11 other Senators	Labor and Public Welfare, Senate	Establishment of Western Interstate Commission for higher education	
S. 2168	Langer, N. D.	Labor and Public Welfare, Senate	College scholarship loans	Opposition (active) 10/22/53
H.R. 250	Elliott, Ala.	Education and Labor, H.R.	Federal aid to health and safety instruction and physical education in public elementary and secondary schools	Opposition (active) 4/26/53
H.R. 1240	Cole, N. Y.	Armed Services, H.R.	To establish cadet nurse programs	Opposition 12/3/53 (Committee on Legislation)
H.R. 2718	Heller, N. Y.	Interstate and Foreign Commerce, H.R.	Creation of U. S. Medical and Dental Academy	Opposition (active) 4/26/53
H.R. 2858	Elliott, Ala.	Education and Labor, H.R.	Federal aid in fields of higher education	Opposition (active) 4/26/53
H.R. 3850	Bolton, Ohio	Interstate and Foreign Commerce, H.R.	Federal aid to nursing education	Opposition 10/22/53
H.R. 6079	Boland, Mass.	Education and Labor, H.R.	College scholarship fund	Opposition (active) 10/22/53

Tax Relief

S. 866	Johnson, Colo.	Finance, Senate	Tax relief for permanently and totally disabled	No action 4/26/53
S. 1154	Ives, N. Y., and Flanders, Vt.	Finance, Senate	Provide for deduction of health insurance premiums for income tax purposes	Opposition 6/4/53
H.R. 10	Jenkins, Ohio	Ways and Means, H.R.	Postponement of tax payments on amounts used to purchase retirement annuities	Approval (active) 2/6/53
H.R. 11	Keogh, N. Y.	Ways and Means, H.R.	Postponement of tax payments on amounts used to purchase retirement annuities	Approval (active) 2/6/53
H.R. 474	Keating, N. Y.	Ways and Means, H.R.	Deduction of medical expenses for income tax purposes	Approval (active) in principle, 4/26/53
H.R. 482	Keating, N. Y.	Ways and Means, H.R.	Provide deduction of health insurance premiums for income tax purposes	Approval in principle 4/26/53
H.R. 1029	Hand, N. J.	Ways and Means, H.R.	Provide deduction of health insurance premiums for income tax purposes	No action 4/26/53
H.R. 1725	Rhodes, Pa.	Ways and Means, H.R.	Tax relief for permanently and totally disabled	No action 4/26/53
H.R. 2243	Dague, Pa.	Ways and Means, H.R.	Removal of 5% limitation on medical expense deductions from income tax	Approval (active) in principle, 4/26/53
H.R. 3375	Matthews, Fla.	Ways and Means, H.R.	Removal of 5% limitation on medical expense deductions for income tax purposes	Approval (active) in principle, 6/4/53
H.R. 3583	Hale, Maine	Ways and Means, H.R.	Provide for deduction of health insurance premiums for income tax purposes	Opposition 6/4/53
H.R. 3585	Javits, N. Y.	Ways and Means, H.R.	Provide for deduction of health insurance premiums for income tax purposes	Opposition 6/4/53
H.R. 3911	Bolton, Ohio	Ways and Means, H.R.	Removal of limitation on medical expense deductions for income tax purposes	Approval (active) in principle, 6/4/53
H.R. 4356	Davis, Ga.	Ways and Means, H.R.	Professional education expense deductions for income tax purposes	Approval (active) 6/4/53
H.R. 4450	Edmondson, Okla.	Ways and Means, H.R.	Increase of allowable medical expense deductions for income tax purposes	Approval (active) in principle, 6/4/53

§ Enacted into Public Law 241, 83rd Congress, Aug. 8, 1953.
‖ Enacted into Public Law 223, 83rd Congress
¶ Identical with S. 977 enacted into Public Law 223, 83rd Congress.
$ Enacted into Public Law 226, 83rd Congress, Aug. 8, 1953.

Tax Relief—Continued

Bill No.	Introduced by	Congressional Committee	Subject or Purpose	Association Action and Date
H.R. 4981	Curtis, Mo.	Ways and Means, H.R.	Medical expense deductions for income tax purposes	Approval (active) in principle, 10/22/53
H.R. 5022	Kersten, Wis.	Ways and Means, H.R.	Medical expense deductions for income tax purposes	Approval (active) in principle, 10/22/53
H.R. 5399	McDonough, Calif.	Ways and Means, H.R.	Medical expense deductions for income tax purposes	Approval (active) in principle, 10/22/53
		Social Security and Disability Insurance		
S. 1470	Kefauver, Tenn.	Finance, Senate	Voluntary coverage under Social Security Act for physicians and others	No action 6/4/53
S. 1908	Murray, Mont., Humphrey, Minn., and Lehman, N. Y.	Finance, Senate	Hospitalization for the aged	Opposition (active) 10/22/53
S. 2260	Lehman, N. Y., for himself and 10 other Senators	Finance, Senate	Revision of Old-Age and Survivors' Insurance; extension of coverage, disability benefits, etc.	Opposition (active) 10/22/53
H.R. 8	Dingell, Mich.	Ways and Means, H.R.	To provide 60 days' "free" hospital care each year for OASI beneficiaries	Opposition (active) 2/6/53
H.R. 9	Dingell, Mich.	Ways and Means, H.R.	To effectuate Section 3 of P.L. 500, 82nd Congress, "freezing" benefits of OASI beneficiaries who are permanently and totally disabled	Opposition (active) 2/6/53
H.R. 383	Byrd, W. Va.	Ways and Means, H.R.	To provide Social Security disability insurance benefits for totally disabled persons	Opposition (active) 4/26/53
H.R. 1376	Bryson, S. C.	Ways and Means, H.R.	Permanent and total disability insurance	Opposition (active) 4/26/53
H.R. 2000	Rhodes, Pa.	Ways and Means, H.R.	Permanent and total disability insurance	Opposition (active) 4/26/53
H.R. 2070	Bailey, W. Va.	Ways and Means, H.R.	To amend Social Security Act to include payment of disability benefits equal to retirement benefits	Opposition (active) 4/26/53
H.R. 2150	Van Zandt, Pa.	Ways and Means, H.R.	Permanent and total disability insurance	Opposition (active) 4/26/53
H.R. 3487	Lane, Mass.	Ways and Means, H.R.	To extend Social Security coverage to include self-employed persons	Opposition (active) 6/4/53
H.R. 3554	Zablocki, Wis.	Ways and Means, H.R.	Total and permanent disability insurance under Social Security Act	Opposition (active) 6/4/53
H.R. 3777	Perkins, Ky.	Ways and Means, H.R.	To amend Social Security Act to include payment of disability benefits equal to retirement benefits	Opposition (active) 6/4/53
H.R. 4160	Kean, N. J.	Ways and Means, H.R.	Waiver of Social Security premiums for disability	Opposition (active) 6/4/53
H.R. 4676	Ford, Mich.	Ways and Means, H.R.	Social Security-public assistance programs to include medical care	Opposition (active) 6/4/53
H.R. 5533	Kean, N. J.	Ways and Means, H.R.	Amendment to Title II of the Social Security Act to increase benefits and revise method of computation	Approval 10/22/53
H.R. 5917	Radwan, N. Y.	Ways and Means, H.R.	Total disability insurance under Social Security	Opposition (active) 10/22/53
H.R. 6084	Dingell, Mich.	Ways and Means, H.R.	Extension of Social Security coverage; permanent and total disability benefits, etc.	Opposition (active) 10/22/53
H.R. 6115	Fine, N. Y.	Ways and Means, H.R.	Total and permanent disability benefits under Social Security Act	Opposition (active) 10/22/53
H.R. 6812	Reed, N. Y.	Ways and Means, H.R.	Extension of Social Security coverage	Opposition 10/22/53
		Federal Subsidization of Private Health Insurance Plans		
S. 93	Hill, Ala.	Labor and Public Welfare, Senate	Federal subsidization of prepayment plans for hospitalization and medical care	Opposition (active) 2/6/53
S. 1652	Humphrey, Minn.	Labor and Public Welfare, Senate	Federal aid to health insurance plans	Opposition (active) 4/26/53
H.R. 4360	Hagen, Minn.	Interstate and Foreign Commerce, H.R.	Federal aid to health insurance plans	Opposition (active) 6/4/53
		Aid to the Handicapped		
S. 2145	Humphrey, Minn.	Labor and Public Welfare, Senate	Vocational rehabilitation for the mentally afflicted	Opposition 12/3/53 (Committee on Legislation)
S. 2436	Potter, Mich.	Labor and Public Welfare, Senate	Vocational rehabilitation of the blind	Opposition 10/22/53
S. 2437	Potter, Mich.	Labor and Public Welfare, Senate	Vocational rehabilitation	Opposition 10/22/53
S. 2570	Murray, Mont., and 9 other Senators	Labor and Public Welfare, Senate	Agency for Handicapped	Opposition 10/22/53
H.R. 402	Celler, N. Y.	Education and Labor, H.R.	To increase rehabilitation benefits and grants for handicapped	Opposition (active) 4/26/53
H.R. 2666	Hagen, Minn.	Education and Labor, H.R.	Establishment of federal Agency for Handicapped	Opposition 4/26/53
H.R. 5562	Rhodes, Ariz.	Education and Labor, H.R.	Vocational rehabilitation of the blind	Opposition 10/22/53
H.R. 5563	Rhodes, Ariz.	Education and Labor, H.R.	Vocational rehabilitation	Opposition 10/22/53
H.R. 6657	Wainwright, N. Y.	Education and Labor, H.R.	Vocational rehabilitation of the blind	Opposition (active) 10/22/53
		Miscellaneous		
S. 166 **	Ferguson, Mich.	Government Operations, Senate	Establishment of Commission to Study Reorganization of Executive Branch of Government	Approval 2/6/53
S. 132	Thye, Minn., and Butler, Neb.	Interior and Insular Affairs, Senate	To transfer Indian hospitals to United States Public Health Service	Approval (active) 4/26/53
S. 691 ††	Humphrey, Minn.	Labor and Public Welfare, Senate	Factory inspections by Food and Drug agents	Approval with amendments, 4/26/53

** Enacted as Public Law 108, 83rd Congress, July 10, 1953.

†† Similar to H.R. 5740 enacted as Public Law 217, 83rd Congress, Aug. 7, 1953.

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Miscellaneous—Continued

Bill No.	Introduced by	Congressional Committee	Subject or Purpose	Association Action and Date
S. 967 ‡‡	Taft, Ohio, and Hill, Ala.	Labor and Public Welfare, Senate	Extension of Hill-Burton Act	Approval 4/20/53
S. 994	Saltonstall, Mass., and 6 others	Labor and Public Welfare, Senate	Federal aid to local public health units	Opposition 4/20/53
S. 1153	Ives, N. Y., and Flanders, Vt.	Labor and Public Welfare, Senate	Omnibus bill providing federal aid to voluntary health plans, medical education, health facilities, etc.	Opposition (active) 6/4/53
S. 1215	Hunt, Wyo.	Government Operations, Senate	Establishment of Department of Health, Education, and Public Welfare	
S. 1436	Griswold, Neb.	Government Operations, Senate	Federal Board of Hospitalization	Opposition to bill; approval of principle 6/4/53
S. 1514 §§	Taft, Ohio	Government Operations, Senate	Establishment of Commission on Governmental Functions and Fiscal Resources	Approval (active) 4/20/53
S. 1584	Murray, Mont.	Labor and Public Welfare, Senate	Aid to leprosy victims	Opposition (active) 6/4/53
S. 1748	Taft, Ohio	Judiciary, Senate	To incorporate the National Fund for Medical Education	Approval with amendments, 12/2/53
S. 1904	Beall, Md., and Barrett, Wyo.	Labor and Public Welfare, Senate	Treatment of narcotics addicts	Approval 10/22/53
S. 2191	Carlson, Kan.	Post Office and Civil Service, Senate	Withholding of health insurance premium from salaries of federal employees	Approval 10/22/53
S. 2245	Bridges, N. H.	Judiciary, Senate	Prohibiting transportation of fireworks	Approval in principle 10/22/53
S. 2515	Malone, Nev., and Butler, Neb.	Interior and Insular Affairs, Senate	Abolishment of Bureau of Indian Affairs	
S.J.Res.*	Bricker, Ohio, and 61 other Senators	Judiciary, Senate	Proposed amendment to Constitution relative to making of treaties and executive agreements	Approval in principle 6/1/53 (House of Delegates)
S.J.Res.* Substitute Amendment	Knowland, Calif.	Tabled	Amendment to Bricker resolution regarding treaty-making powers	
H.R. 116	Church, Ill.	Judiciary, H.R.	Prohibit transportation of fireworks	Approval in principle 4/20/53
H.R. 303	Judd, Minn.	Interior and Insular Affairs, Senate	To transfer Indian hospitals to United States Public Health Service	Approval (active) 2/6/53
H.R. 633	Teague, Texas	Veterans' Affairs, H.R.	To establish Federal Board of Hospitalization	Opposition to bill; approval of principle 4/20/53
H.R. 992 ‖‖	Brown, Ohio	Government Operations, H.R.	To establish Commission to Study Reorganization of Executive Branch of Government	Approval 2/6/53
H.R. 1560	Miller, Calif.	Post Office and Civil Service, H.R.	Payroll deduction of hospitalization insurance premiums from compensation of federal employees	Opposition 6/4/53
H.R. 1817	Dingell, Mich.	Interstate and Foreign Commerce, H.R.	National compulsory health insurance omnibus bill	Opposition (active) 4/20/53
H. R. 2449	Bailey, W. Va.	Interstate and Foreign Commerce, H.R.	Establishment of Bureau of clinics for chronic alcoholics and narcotic addicts	Opposition 4/20/53
H.R. 2769 ††	Wolverton, N. J.	Interstate and Foreign Commerce, H.R.	Factory inspections by Food and Drug Agents	Approval with amendments, 4/20/53
H.R. 2862	Rogers, Mass.	Veterans' Affairs, H.R.	To establish Federal Board of Hospitalization	Opposition to bill; approval of principle 4/20/53
H.R. 3171 ¶¶	Harris, Ark.	Interstate and Foreign Commerce, H.R.	Extension of Hill-Burton Act	Approval 4/20/53
H.R. 3182	Miller, Neb.	Interstate and Foreign Commerce, H.R.	Establishment of Department of Public Health and Welfare	
H.R. 3204	Yates, Ill.	Interstate and Foreign Commerce, H.R.	Treatment of narcotic addicts in Public Health Service hospitals	Approval 6/4/53
H.R. 3551 ††	Sullivan, Mo.	Interstate and Foreign Commerce, H.R.	Factory inspection by Food and Drug agents	Approval with amendments, 6/4/53
H.R. 3586	Javits, N. Y.	Interstate and Foreign Commerce, H.R.	Omnibus bill providing federal aid to voluntary health plans, medical education, health facilities, etc.	Opposition (active) 6/4/53
H.R. 4145	Bailey, W. Va.	Education and Labor, H.R.	Federal funds to improve industrial safety	Opposition 6/4/53
H.R. 4406 §§	Halleck, Ind.	Government Operations, H.R.	Establishment of Commission on Governmental Functions and Fiscal Resources	Approval (active) 4/20/53
H.R. 4456	Heller, N. Y.	Interstate and Foreign Commerce, H.R.	Federal aid for ambulance service	Opposition 6/4/53
H.R. 5419 ¶¶	Harris, Ark.	Interstate and Foreign Commerce, H.R.	Extension of Hill-Burton Act	Approval 10/22/53
H.R. 5422	Miller, Neb.	Interstate and Foreign Commerce, H.R.	Treatment of narcotic addicts	Approval 10/22/53
H.R. 5740 ***	Wolverton, N. J.	Interstate and Foreign Commerce, H.R.	Factory inspection by Food and Drug Agents	
H.R. 6285	Thompson, La.	Interstate and Foreign Commerce, H.R.	Aid to leprosy victims	Opposition (active) 10/22/53
H.J.Res. 7	Auchincloss, N. J.	Judiciary, H.R.	Proposed amendment to Constitution relative to making of treaties and executive agreements	Approved (active) 2/6/53
H.J.Res. 72	Ray, N. Y.	Interstate and Foreign Commerce, H.R.	Control of air pollution	Approval 6/4/53
H.Res. 13	Bolling, Mo.	Rules, H.R.	Problems of the aging	No action 6/4/53
H.Res. 57	Multer, N. Y.	Rules, H.R.	Study of accident and health insurance	No action 4/20/53

‡‡ Enacted as Public Law 151, 83rd Congress, July 27, 1953.
§§ Enacted as Public Law 109, 83rd Congress, July 10, 1953.
‖‖ Identical with S. 106 enacted as Public Law 108, 83rd Congress, July 10, 1953.
¶¶ Identical with S. 967 enacted as Public Law 151, 83rd Congress, July 27, 1953.
‡‡ Identical with S. 1514 enacted as Public Law 109, 83rd Congress, July 10, 1953.
*** Enacted as Public Law 217, 83rd Congress, Aug. 7, 1953.

PUBLIC RELATIONS CONFERENCE

The following papers were presented before the Sixth Medical Public Relations Conference of the American Medical Association, Nov. 30, 1953, Jefferson Hotel, St. Louis.

Address of Dr. Walter B. Martin, President-Elect, American Medical Association

I am particularly pleased with the theme of this conference because it has an important purpose, public relations. If a business man or some other layman should come into this meeting and glance over the audience, he might wonder what brought us together, why you men, leaders in the medical world, should leave the activities and pleasures of home and travel long distances to meet in conference here today. What important business do you have to transact? What will this profit you and those you look after in your community?

All of you who serve medicine and the medical welfare of your people and who have kept burning the lamp of idealism will often find yourselves puzzled and disturbed by some of the problems of medicine in our modern society. We recall the stature and dignity of the physician that we knew in our youth and the high regard in which he was held by all in his community. Possibly his example inspired us to enter the profession and, by so doing, to strive to render service to humanity. Now, perhaps, we are concerned with the problems in practice that arise in a more complex community and by the attitude of persons toward us, not so much as individuals but as a group. We hear charges and countercharges against our profession. We are aware of conflict between practicing physicians and hospitals and of discussions of problems in the twilight zone between medical practice and preventive medicine. We are conscious of the wide appeal in many areas of proposals to alter the basic set-up of medical practice, by socializing the entire medical profession. These problems cannot be solved by any one of us or by any local or state society acting alone. While their importance or urgency may vary from community to community and from region to region in different degrees, they affect all of us. It is necessary, therefore, that we gather together on a national level and take counsel with each other. Here we should assemble facts, exchange ideas, formulate programs, and, in honesty and sincerity, attempt to perfect a plan of action that will be of help in providing better medical care for all of our people.

I like to think of public relations not as a means of putting ourselves in a better light before the public but as a way by which we can learn better how to serve the public and to constantly enhance the quantity and quality of medical care and its availability. The first step is to look at ourselves as individual practitioners and to examine ourselves as a group, acting through our local, state, and national organizations. Does the light of idealism glow less brightly among us than it did a generation ago? In a crowded, busy life have other considerations than that of service taken first place in our thinking? We have as a professional group a great responsibility. As a learned profession, no other but ourselves can justly judge our competency as physicians or establish standards of our responsibility to our patients and to society. By reason of our expert knowledge in the field of health, we are better able to estimate the effect for good or evil of proposals in the field of health. If our judgment is given honestly and fearlessly for the common good, it should and will carry weight. If it is founded on ignorance or colored by self-interest, it will be disregarded.

It follows, therefore, that the first duty of this group is to consider ways and means of further developing effective relations through state and county organizations with individual physicians. We should strive to stimulate every physician to carry out the major purpose of the American Medical Association, "The advancement of the science and art of medicine and the betterment of public health." This purpose will be accomplished when each member of the profession has due regard for his total obligation as a physician.

I was raised in the country near a small village. There were four men in the community who commanded the respect and the confidence of the community as a whole: the minister, the teacher, the judge, and the doctor, who severally represented in the eyes of the community morality, learning, justice, and health. These are still fundamental concepts in any community. Somewhere in the growing complexity of life, these concepts may have been lost or confused, but they should be reactivated everywhere. The physician should be as interested in and as responsible for the total health of his community as he was in village life. He should be active in his professional society, in his place of worship, and in his community welfare agencies. He cannot of course "cover the waterfront," but if he selects one or more of these activities, he will be a better doctor, with a broader outlook on life, and its total responsibilities.

One of the primary accomplishments that should flow from this meeting is the stimulation of greater interest in our local society. The impact of the activities of a local society on its community can be greater than that of state or national organizations operating in their broader field. It is unfortunate that the concept of the physician as a man of science has too completely replaced that of the physician as a healer. The pursuit of knowledge has replaced the search for wisdom. Attendance on the hospital staff conferences has depreciated attendance at local society meetings. It is at these society meetings that the real purposes and objectives of organized medicine should be discussed and community health and welfare considered and furthered. Such activities on the part of local societies will solve many of our problems and will meet in their inception many of the criticisms, just and unjust, that are levelled against us.

There is a second field of public relations that concerns us. Medicine has outgrown the little black bag. Health is no longer entirely an individual matter between a physician and a patient, however important that phase of medicine may be. Society has become more complex. The proper field of activity of public health agencies has been extended. Hospitals have expanded and improved and have become a more important factor in community life. Conflicts have arisen between medicine, public health, hospitals, and other agencies in the health field. Development of proper relations between medicine and these other components in the field of health is of extreme importance. Problems that arise need careful joint exploration for the purpose of coordinating all health activities for the total benefit of the public. Here again, the local society should take leadership in its community. On the national level, broad general principles may be laid down and agreed upon, but in a country as large and diverse as ours, these principles must be activated locally and adjusted on the basis of local conditions and needs.

The third phase of public relations is to bring the story of medicine to the people. The scope of the activities of organized medicine of course goes far beyond the department of public relations and covers health education, medical education, protection in the field of food and drugs, plan for extension of medical care, promotion of scientific advancement, and many other endeavors of the American Medical Association. These numerous and valuable activities for the betterment of the public health need to be brought home to all doctors and to all people. The story of the contribution of organized medicine to the public welfare is thrilling and is a record of which we can be justly proud. It needs to be told again and again until it is known in the city streets and at the country crossroads. It needs to be told so that persons know what are the components of good medicine and why socialization of medicine is bad, not for the doctor necessarily but for themselves. Many proposals are being put forward in the field of health, purporting to advance the medical welfare of the people. Some of these are good, some vicious, some silly, and some just plain stupid. It is necessary for us to study these proposals and to consider their effect for good or evil on the public health. It is equally our duty to make public our considered judgment in these matters. It is as much our duty to do this as to explore the cause of a disease in a patient and advise him according to our best knowledge and ability.

Most of the activities of this department can best be carried out on the local level, and correction of abuses can be made effective only there. Our national organization is without punitive power and should have none. Our success in the field of public and professional relations must be accomplished

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through the power of persuasion. This should begin in the medical schools, somewhere during the formative years of the undergraduate and graduate student of medicine. The student should learn something of the duty of medicine to society and of the moral obligation that is assumed by a person who is called a physician.

Entrance into a medical society should not be a casual occurrence but should be marked by the seriousness and dignity that accompanies the taking on of a solemn obligation. Perhaps there should be a period of instruction given at intervals by older physicians, covering the ethics of our profession and the physician's duty to the patient, to his community, and to his profession.

You men who are gathered here have an important role to play. If we build well on the foundation of sound and active local societies, if we carry to the people a knowledge of what constitutes good medicine and if we coordinate for the common good all of the forces in the field of health, we need fear no evil.

Address of Dr. Leo H. Bartemeier, Chairman, Committee on Mental Health, American Medical Association

The confidence and the respect that the public manifests toward medicine is neither peculiar to the present era nor solely dependent on the quality of medical care. These favorable attitudes are ancient in their lineage. They are as old as medicine itself. All peoples in all times have placed their faith and their trust in their physicians. The medical man of mediocre ability may be regarded by the community as a far better doctor than a colleague whose intelligence and scientific training are obviously of superior quality.

The judgment of the community is usually correct, because adequate medical care involves the personality of the physician as well as his scientific acumen and his technical skill. His personality and his reputation as a person in the community are of immediate importance to patients and their families. They wish to know about his medical training and his professional experience but "What is he like? What sort of man is he?" are usually their first questions. This interest in the personality of the doctor bears a striking similarity to present-day medical teaching, which maintains that it is as important to know what kind of a person has an illness as it is to know from what kind of illness the patient suffers. Medicine, too, has a strong interest in personality, because perhaps 30 to 40% of illness is known to represent reactions of personality to crises and stress in life situations. In other words, it is not a question whether a patient's illness is organic or functional but rather to what extent is it organic and to what extent is it functional? All sickness is a combination of both in varying proportions.

The majority of sick persons hope that their physician, in addition to his medical knowledge and skill, will have sufficient interest in them so that they may have his complete attention. They want to sense that he cares how they feel and that he will relieve their suffering as quickly as possible. They hope he will be kind and that he will take his time with them. They hope that what they have to tell him will seem as important to him as it does to them.

At the same time, most persons are afraid of doctors when they go to them for the first visit. They are afraid that, in the course of being examined, the doctor will come to know what they know about themselves and that he will criticize them, become angry with them, and dismiss them from his care. They are afraid that the physician will discover that their sickness is more serious than they had suspected. They often fear the worst. At the time of the first consultation, they may show no signs of being afraid. They try to be courageous and to make a good impression, because they hope the doctor will like them. In protecting themselves from expected criticism, they may frequently criticize themselves to ward off any critical attitude on the part of their physician. Others react to their inner fright by boldness or by being critical of the profession or even the doctor himself. Because they are afraid, they attack.

There is another group of patients who consult physicians because of various physical complaints who may be described as repeatedly difficult and disagreeable. Regardless of kindness, patience, and tolerance; regardless of what medicaments or other treatments are prescribed, this group of patients, instead of obtaining relief from suffering, continue to suffer and frequently complain that they suffer more than before they began treatment. They try to provoke their doctor to become angry with them, to scold them, and to treat them harshly and severely. When they succeed, they seem to improve, but this improvement is only transitory. They tend to be uncooperative in following advice, they misinterpret what their physicians tell them, they break appointments, they are continually dissatisfied, and yet they insist on remaining in their physician's care. Some of these patients then begin to reason that they need surgery, and they are so persuasive and so certain that an operation will relieve them of their abdominal pain or their pelvic symptoms that they sometimes succeed in overcoming their doctor's doubts. For a time, then, they are relieved, but sooner or later their previous symptoms recur, or new symptoms develop. This group of patients, unlike the majority of patients, consult physicians not for relief from pain, discomfort, or distress, but, because they unconsciously seek greater pain and suffering than their original complaints provided. Unlike most persons, this group finds satisfaction in suffering in an effort to relieve their unconscious sense of guilt or to satisfy their masochistic strivings. Every practicing physician is familiar with patients who belong to this group. They often consult one doctor after another. Their motivation toward medicine is in direct contrast to that of most persons.

When persons become sick or are injured in accidents, they simultaneously undergo psychological changes in their relationships to others that are of varying degrees of intensity. These changes, which accompany every sickness or injury, are sometimes more important than the illness itself, and they frequently constitute the primary motivation toward medicine. It is well known to practicing physicians, for example, that many patients who consult them are more frightened than sick and that, when they have been reassured that their illness is not serious and that they will soon recover, their emotional relief makes the importance of their physical complaints shrink to a minimum. They are like children who because of having fallen to the pavement or because of the sight of blood from an abrasion of the skin run screaming to their mothers. They are far more frightened than injured, and, after a moment in their mother's arms and with her reassurance, they quickly resume their play.

Physicians do well to remember that some of their patients who expect their doctors to relieve them by magic-like methods are patients who expect as quick relief as they obtained in their childhood. An infant screaming in its crib becomes instantly silent in the moment it is taken into its mother's arms. Every human being has had identical experiences not only during infancy but also in childhood.

Children undergo many minor and transitory pains and aches as well as slight illnesses that disappear through the care they receive from their mothers. It is, therefore, only natural that they should believe that their mothers understand them very well and know just what to do for them. Many adult patients expect the same understanding and attitude from their physicians, the same omniscience and the same omnipotence they believed their mothers possessed. The past is always a part of the present and often more important than a current illness per se. All good clinicians recognize this fact but tend to lose sight of it during a busy practice.

With some patients, the anxiety they suffer in connection with the occurrence of illness is derived from the dread that they may experience the same fate as some member of their family whose death they had secretly wished. Although they are sick and in need of medical care, it is their anxiety that is the more important motivating force in bringing them to the physician. When they say, "You won't let anything happen to me, will you doctor?" they show that they are afraid that they might die. They also show their belief that only their doctor can save them. To admonish such a patient not to "be so foolish" or to become angry because one has told the patient again and again that he will recover shows that one does not understand the patient who has the illness. Repeated failure to understand patients in matters of a serious nature to them tends to motivate them away from medicine.

In the course of sickness that is incapacitating, many persons undergo a psychological regression. The feeling of being helpless and of having to be completely dependent upon others even, perhaps, to the extent of having to be fed, bathed, and toiletted, is a reinstatement to the period of infancy. In these circumstances, some patients make incessant demands on their physicians, their nurses, and their families. They become afraid to be left alone, burst into tears over slight disappointments, and are unable to show any consideration whatever for their physicians or anyone else. The psychological change that has taken place in such patients consists in the fact that their psychic energy, which was formerly invested in their families and friends, their work, and their play, has become reinvested entirely upon themselves. This regression to an early phase of emotional life, which may occur, for example, in a patient with a fractured femur, is not "an act" or an intentional way of behaving. It is, on the contrary, a reaction of the personality in connection with the treatment of a fractured femur. It becomes the more important aspect of the illness. The patient's family knows that whenever he must be confined to bed he becomes very difficult to care for, that, under these circumstances, he is "not like his usual self" and that he is not intentionally dramatic. To become severe with such a patient, to restrict the frequent attention he needs, and to prevent him from having visitors is to do both the patient and his family a serious disservice. It demonstrates that the physician does not understand the patient, and it comes as no surprise when his services are discontinued by the family. Clinicians who do understand the concomitant psychological alterations in such patients are less likely to lose their tempers with them. To remain calm and collected in situations in which both the patient and the members of the family are anxious and distraught has a quieting and reassuring effect and has always been characteristic of the good physician. The following statements in the report of the first Conference on Psychiatry and Medical Education are pertinent:

"The medical profession has in our society gained a very large measure of respect and trust. People turn to physicians for salvation from distress or anxiety of the most varied origins. Such a challenge to the medical profession cannot be ignored. In what measure can it be met? The traditional and continuing major function of the physician is to care for patients with physical illness. The current demand is that he perform this function with sufficient understanding of the emotional attitudes and social problems of the patient and those in close relationship to him, so that the patient and the family are enabled to participate in and make optimal use of medical care. This demand is a realistic one which the physician can be expected to fill.

"Advances in medical science have brought about the realization that mental and emotional conditions cause or contribute to illness (with either physical or psychological symptomatology) and affect the course of treatment. As a result, the physician is becoming more aware of the concept of multiple causality or a constellation of causal factors in the diagnosis and treatment of pathology.

"The physician's functions overlap to a considerable extent the functions of other professional workers in the community. The medical profession must avoid the mistake of thinking that it can do the whole job. Such mistaken ideas are fostered by narrow professional jealousies and by the public itself, as is indicated in the wide range and varied types of needs which the doctor is expected to serve. Medicine has provided such excellent service in certain fields of somatic disease that the assumption is naturally made that it can be similarly competent in other areas. This has brought about the attitude of looking to the physician for the solution of a good many problems, some of which are or should be within his province, and some of which are not. What then, is the special contribution of the physician? It is true that no one doctor can master all the technical knowledge and skills of the different specialties—science has grown so fast. But it is not asking a doctor to take on the specialty of psychiatry to ask him to use some general principles which psychiatry (and physiology) can place in his hands. It is not suggested that a doctor abandon his valuable laboratory reports, but it is urged that he keep them from pushing other considerations out of the picture. There are two sentences of Francis Peabody, a professor of medicine, which describe the doctor's full job. 'The clinical picture is not just a photograph of a man sick in bed: it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes and fears.' 'The secret of the care of the patient is in caring for the patient.' The good doctor will balance the physiological data in his field against the condition of the patient as a person in his family and social background; he will try to increase the patient's security in an insecure world; to increase the patient's dignity as an individual and not a case, and to make him feel it is important to him, the physician, that this particular patient should return to his place in the world. As a result of these unique qualities and contributions, the physician stands in the community as a special authority to whom one can go with trust and confidence."

This was the censensus of some 70-odd professors of psychiatry and deans of medical schools in a conference in 1951. In preparation for this conference, 3,500 questionnaires were sent to bankers, industrialists, unions, teachers, lawyers, ministers, social scientists, and over 400 women, the larger proportion being housewives. Over 700 replies were received. The questionnaires consisted of 10 questions asking what persons in the community think are the common emotional needs of people, how the doctor could best meet these needs, and whether he is doing so. The replies emphasized repeatedly that doctors are viewed as hardworking, conscientious, and respected; that too much is expected of doctors; that doctors have an olympian view of themselves; that doctors are too busy to do all they might; that in the treatment of physical disease, doctors do not consider the feelings of patients and even accentuate anxieties; that they increase fear by not explaining things to patients in nontechnical language and that there is a great tendency to turn to a nonmedical, miscellaneous assortment of persons for outside help. In reply to the question, "Can the doctor help with emotional needs?" most answers indicated that (1) the doctor could help in terms of counseling, being a good listener, showing continued sympathy and understanding of the patient as a human being and eliminating assembly-line methods. The replies to the question, "What are the common emotional needs of people?" included a wide range: health and economic security, feelings of loneliness, insecurity, anxiety, frustration, familial needs, and fears of many kinds. These are the motivations that influence a considerable percentage of the public toward medicine. In some instances, persons turn to their physicians openly for advice and assistance with personal and family problems because it is their physicians in whom they have the greatest faith and confidence. In a good many other instances, their worries, fears, and feelings of helplessness over their situations are concealed beneath their presenting complaints of headaches, nervousness, tenseness, backache, mild anorexia, and undue fatigue. More and more persons are turning to doctors with problems that physicians can regard only as being beyond the scope of their professional training, and it is only natural that doctors develop the feeling that these patients are unrealistic in their requests. To refer these patients to another physician, to a clergyman, or to anyone else invariably makes the patient feel unwanted, unreasonable, and rejected. It is far better to do what one can, to recognize that these personal emotional crises are affecting the health of patients, that they are medical problems, and that they belong to the province of medicine. Finally, there is urgent need for recognition of the fact that all patients who are motivated to medicine by their anxiety are as children who turn very naturally to their physicians, whom they endow with the same wisdom and good judgment that they always thought that their mother or father possessed.

Address of Dr. Edwin Crosby, Director, Joint Commission on Accreditation of Hospitals

The program of the Joint Commission on Accreditation of Hospitals is a truly fine device for assuring the public of good medical care, and, in my judgment, definitely a positive public relations asset. There is without doubt considerable lack of understanding of the Joint Commission at the national level,

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especially how it operates through its board of commissioners, and I should like to review for you who it is that are on this board of commissioners. First of all, there are three physicians from the American College of Physicians, three surgeons from the American College of Surgeons, six representatives from the American Medical Association, including three from your own Board of Trustees, seven representatives of the American Hospital Association, three of whom are physicians, and one representative from the Canadian Medical Association. Thus, of 20 members of the board of commissioners of the Joint Commission, all but 4 are physicians and most are practicing medicine either in the United States or in Canada.

These men are dedicated to the purpose of the Joint Commission, and they do all that they can within their power to carry out this purpose. I should like to read to you now from the bylaws of the Joint Commission as to what the purpose of this Joint Commission is. It is "to conduct an inspection and accreditation program that will encourage physicians and hospitals of the United States and Canada voluntarily (1) to apply certain basic principles of organization and administration for efficient care of the patient; (2) to promote high quality of medical and hospital care in all its aspects in order to give patients the greatest benefits that medical science has to offer; and (3) to maintain the essential diagnostic and therapeutic services in the hospital through coordinated effort of the organized medical staff and the governing board of the hospital."

It is tremendously important that this purpose reach the grass roots of our country, that it reach the grass roots with the same story that we know at the national level. There is, to say the least, some confusion at the grass roots about the purposes of the Joint Commission. We have been called various things, including the "medical Pentagon in Chicago." And there is a definite misunderstanding, as evidenced by some of the letters we receive, about what we are doing for the benefit of patients, because we have been called "an aspect of medical socialism."

Your job, it seems to me, is to explain that the Joint Commission is one of the greatest bulwarks against socialism that medicine and the hospital professions have ever constructed. It assures the public that our primary concern is for the patient and the care he receives. As positive evidence of this, doctors in hospitals in this country are spending almost one half million dollars each year of their own funds to support this program voluntarily, so that the quality of medical care in hospitals can be raised on a voluntary and not a compulsory basis.

I would like to show you how I think you might tackle this at the local level, because I think that is where we need to tackle this problem. Let me give you just a brief case report of a recent request we received in our offices in Chicago, where there was evidence that there was no understanding at the local level.

An inquiry came from one of the wire services in Chicago that had originated in one of their offices in the South. The reporter asked me three questions: First of all, "What is this Joint Commission on Accreditation of Hospitals? I have never heard of it." Two, "Is the Joint Commission really going to disapprove 500 hospitals in 1953?" Three, "Are the standards of the Joint Commission tougher than the ones the American College of Surgeons has used for 35 years?" Let me answer the last two questions first. I was pleased to tell him that the records showed that we had upgraded from no accreditation twice as many hospitals as we had downgraded. Furthermore, the records showed so far for this year that there was a net increase of the number of hospitals in the United States and Canada that carried accreditation under the aegis of the Joint Commission. As far as the standards are concerned, they are the same standards that the College of Surgeons had, because we took them over lock, stock, and barrel, and there have only been two changes made in these standards to improve them.

"Well, this is a very fundamental thing," he said, "and I would like to write a story about it. How shall I write a positive story about the Joint Commission?" He went on to say, "I was a patient once in a hospital, and, as a patient with a pain in my stomach, my doctor sent me to the hospital. What can I expect in an accredited hospital that I wouldn't get maybe in a nonaccredited hospital?" I was amazed at the number of things which I was able to tell him that he might expect in an accredited hospital that he might not expect in a nonaccredited hospital. Here they are: First of all, the medical staff is made up of qualified physicians, graduates of approved schools of medicine in the United States. These physicians are practicing medicine and surgery in the areas to which they are qualified by experience and training. Second, before you are operated on, you will have a history, a physical examination, the necessary laboratory work done, and a preoperative diagnosis made by your surgeon. If he feels that a consultation is necessary, he will call in a consultant. All of this, of course, unless there is a real emergency for you to be operated on immediately. Thirdly, when you go to the operating room, you know that you will be operated on by a qualified surgeon, as determined by the local medical staff. He will be assisted by a medical assistant, and you will be surrounded by all the necessary technical controls to assure you of sterilization of supplies.

After operation, you will be followed by the anesthesiologist in a recovery room, if the hospital is large enough. After that, you will be assisted by medicine's indispensable man, the pathologist. He will receive the tissue that was removed at operation, will examine it, and will make a report on it that will be included in your medical record. Then all of the patient's care in that hospital will be reviewed by the medical staff at least once a month by the various committees. The medical staff evaluates itself and governs itself subject to the ultimate authority of the board of trustees. In addition to this, there are many other things you might expect in an accredited hospital. You will find that there are nurses. In some hospitals, there are no nurses. You will find that there are qualified technicians, that you are being taken care of in a modern plant. If it is not modern, you will be assured that there are all the precautions that are necessary to be taken to prevent fire. The reporter's answer to me was this, "All this and heaven too?" I said, "Yes, that is what you can expect in an accredited hospital."

This is something that I am proud of. I think that every doctor in the United States and Canada can and should be just as proud as I of the accreditation program. It is important to tell this story. The medical profession is working with the hospitals of this country. They are paying from their own pockets, from their own funds, to assure the public that they will receive the best quality of medical care available. All hospitals, large and small, with accreditation have the stamp of a third party that the standards of adequate medical care have been met.

Let me quote from something the charter chairman of our commission once said. Dr. Gunnar Gundersen, an A. M. A. Trustee, in talking of the Joint Commission, said: "It is a voluntary movement, representing the best thinking and the best inspiration of five of the most powerful groups in the world dealing with health. As our duties [those of the board of the commissioners] are discharged well, the benefits to mankind through our profession, through our hospitals, and for our civilization are on record." This is from the national level.

Address of Dr. Durward Blakey, Secretary-Treasurer, Clarksdale and Six Counties Medical Society, Clarksdale, Miss.

When we say that a program works, we must have firmly in mind what the system is and what it is expected to do. In the instance before us today, we are concerned with the public relations value of a working audit system, and, most assuredly, our audit system could not be working unless it did produce bountiful results in the field of public relations. In a sense, public relations and an audit system are inseparable.

It is impossible to separate completely the activities of a hospital and be able to say, for example, that the management is poor but the public relations department is excellent. The multitude of operations contributing to the success of the hospital all exert their effects, one upon the other, to produce a composite whole. In this respect, public relations must be considered and actually is an attitude.

There is one attitude in every hospital, and it is reflected by the employees, the management, the medical staff, and the auxiliary. This attitude is rapidly communicated to the new patient as well as to the entire community, and it is this attitude that constitutes our most important public relations asset. Therefore, when we say that our audit system works, we are, in fact, saying that the doctors of our community have ac-

cepted a leading role and assumed the responsibility, which can only be theirs, of proving to the employees, management, auxiliary, and public that the best possible medical care is guaranteed to the patient. These persons cannot be fooled. They are satisfied in their own minds whether this situation actually exists or is merely said to exist. If they are convinced it exists, their good opinions come back to you many times from their friends, neighbors, and acquaintances. This person-to-person communication is our most important field of public relations.

It is impossible to assume that good management can offset a poor or absent medical policy. There is no means whereby a hospital can render the best possible medical care unless the medical staff has adopted and strictly enforced a plan whereby every doctor's ability is constantly checked and his privileges assigned accordingly. A medical audit system represents an ideal. The success of any venture depends on the effort expended in its behalf by its proponents. We must always be sure that the idea or service we have to sell is what the public wants. At the same time, it is important to know that the majority of those involved in the venture are sincere in voting for it rather than paying lip service merely because they are afraid to be on record as opposed to it.

When our doctors first met to draw up the bylaws, rules, and regulations of our hospital, it was evident that the mass of work involved did not appeal to anyone. There was no more than the usual incentive every doctor has to be a part of something better than we have had before. There may have been a feeling that whatever was drawn would be loosely enforced, and this might well have been the case. Patients in our area have long been able to keep their own medical counsel, being, as they are, in close proximity to a leading medical center. Referral of patients for consultation locally was about as low as it could be, thus contributing to an increase in cost to the patient, since they did have to leave town for consultations. Such a condition over a period of time could only result in lowering public confidence in the profession.

Under our new bylaws, it was evident from the beginning that consultations were the one means of keeping the audit committee satisfied. Many meetings were devoted to drawing rules covering required consultations. Gynecologic surgery without consultation was eliminated. Writing consultations whether required or not has become almost routine. An early high cesarean section rate was fully audited and, though shown to be justified, served full notice that the staff would live by its bylaws. The pathologist was called into conference with the tissue committee and invited to give strict interpretations of all tissues submitted to him.

By now, it had become obvious that our doctors were responding to the incentive offered by a system of which they were a part and that they approved a searching scrutiny of their work by their colleagues. If there were any who did not fully approve, they would have found it necessary to comply because of the pressure characteristics of the audit system. We felt justified, therefore, in releasing some public information to the press on our system.

It had been rumored for some time that a patient could hardly be mistreated in the new hospital, but after the first major feature written in our local paper, the profession as well as the hospital not only gained a wealth of favorable comment but obviously assumed a place and a stature in the eyes of the community.

It is well to pause at this point to reaffirm what has already been indicated. Public relations and publicity are not the same, though good publicity adds a great deal to the public's opinion of the hospital, thus enhancing the public relations. Feature articles in the press and over the radio are extremely important in crystallizing public opinion, but, no matter what is doled out to the reporters, it is practically valueless unless it is borne out by the actions of all those concerned in the operation of the hospital.

Public Relations, as we are prone to think of it, is something tangible. We should forget this idea. In its simplest sense, public relations is nothing more than the enthusiastic devotion to duty of all those concerned in the operation of the hospital, coupled with a sense of something worth while being accomplished and a feeling of oneness or *esprit-de-corps* between all those persons actively working together. This feeling can be generated by the medical staff as by no other group in the institution. The effect of firm medical staff government on the nursing and maintenance personnel is of the utmost importance and of incalculable benefit. The institution is the place where the doctors work. If they are slipshod in managing themselves, it will inevitably be reflected by less than the best possible in patient care and, therefore, in poor public relations.

There are many opportunities for good public relations growing out of staff government. The crux of good staff government is the audit system. The active audit of the records, the review of patients in the hospital, analysis of tissue reports, operative indices, morbidity, mortality, etc., are of no value unless everyone realizes that a strict accounting of derelictions will be had. There is considerable overlapping in the work of the various committees and service reports necessary to proper functioning of the audit system. This double check almost completely eliminates the chance of internal politics, which is of prime importance.

After the publication of our first feature on staff government, it soon became obvious to the officers of the staff that at least the vast majority of the doctors favored interpretation of the bylaws, rules, and regulations in the strictest sense. A new feature dealing entirely with the audit system was prepared by a reporter invited for the purpose. This article aroused a flood of favorable comment, not only at home but throughout the state. It is primarily because of this article that this paper is being presented here today. Though it might appear that the development of our public relations program was planned, this is not the case. We have tried to develop a good public relations program, but what we have done has been a natural outgrowth of the audit program.

We should never forget our controlling body. The success or failure of any hospital depends on its medical staff, but a good sound policy in staff government can quickly elicit the solid support of the Trustees. These persons are forgotten all too often, but they never forget us. Good liaison pays untold dividends. There are many other groups intimately concerned with the functioning of the hospital though not primarily a part of it. These include, among others, our volunteer health agencies, official health agencies, newspaper and radio personnel, ministers and church groups, and civic clubs. Representatives of these groups can find the pulse of the hospital very quickly and are attuned to the attitude of the operating personnel. The hospital auxiliary will feel the effects of medical policy in morale of the hospital. If the auxiliary does not pick it up, you may be sure there is little to pick up.

It is not enough to give good medical care—the patient must be told he is getting it and the fact proved. For example, there will seldom, if ever, be a complaint from a patient for the charge of a routine admission roentgenogram if he is given a small folder outlining the reasons for the procedure. Small brochures on the purpose and scope of the hospital given to the patient are well worth while.

Morale, it has been said, is a lot of little things. In hospital work, one of these can be an active audit program. If it is effective, the medical care system will be effective, and the doctors' morale will be reflected by the hospital personnel and the auxiliary. Call it what you will, morale or *espirit-de-corps*, the result is good patient care. When this state of affairs is reached, the hospital acquires the human element that is the ultimate in good public relations.

At the time of this writing and, growing out of our staff government, we have evolved a community blood bank, poliomyelitis center, doctor locator service, emergency call system, and grievance committee. In addition, we have begun a memorial medical library. The opportunities offered for publicity and enhanced public opinion are evident. Our doctors are taking the problem of individual public relations back to their offices, to the civic clubs, and to their routine lives as citizens of the community. The far-reaching effects of the audit system pay ever-increasing dividends.

Our hospital has 100 beds and was built under the Hill-Burton plan. It is not the only hospital in the community. At this writing, it has been open and receiving patients only 11 months. It would seem impossible that so much could be accomplished in such a short period, yet it has. While comparable hospitals in the mid-South have had about 30% occupancy

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during the first year, ours has had nearly 38% so far, and, on the present basis, it will be higher when the year has ended. We feel this margin of occupancy is due in its entirety to our public relations program and that it cannot fail to increase as time goes on. We know we are on the right track. We know we have what the public wants and is entitled to receive—the best medical care possible. We know the public is learning this fact and growing to appreciate it. We know that we have worked long and hard over our program of staff government. We know we are better doctors because of it, and we know the patient is the sole beneficiary.

When our chief of staff was elected, in his acceptance, he stated that his policy would always be "equal rights to all—special privileges to none." He has repeated it on every possible occasion. In our hospital, it has come to mean good medical care—the best available—to everyone. We have come far but the limit is not in sight.

In summary, the public relations values of an audit system may be divided into three parts, one of which we can assign to the public, one to the physicians of the staff, and one to the hospital itself.

To the public, the audit system (1) builds confidence and trust in the doctors and the hospital, and (2) assures the patient of treatment which is completely competent on the highest ethical plane. To the hospital, the audit system (1) assures competent and complete medical records; (2) finds and points the way to correction of administrative deficiencies; (3) materially advances the hospital's efforts toward accreditation; and (4) fosters close liason and promotes understanding between the medical staff and the trustees. To the physician, the audit system (1) is the best argument and the best reason for exclusion of external control of the practice of medicine; (2) means that privileges are assigned solely on the basis of professional ability and ethical practices; (3) promotes competent practice from two standpoints: *a.* incentive, *b.* pressure; and (4) eliminates, insofar as possible, both internal and external politics on the staff and, coupled with a capable and conscientious chief of staff, assures impartiality and fairness to all members.

Address of Dr. David W. McCarty, Chairman of the Board of Supervisors of the Colorado State Medical Society

I represent before this meeting a type of state board organized for self-discipline which was pioneered by the Colorado Medical Society, which has been highly successful during the six years of its existence, and of which the society is justly proud. The chairman has asked that my part in this panel be to describe to you, not so much the mechanics of a state grievance committee but the realistic operation of such a committee, set up to perform definite services and having been given the authority by which those services can be accomplished. To describe the action of such a committee is like trying to tell a medical student what psychotherapy is; it simply cannot be done adequately without being able to demonstrate the board in session.

Departing for a moment from the realistic approach, it seems to me necessary that we first establish the position of the state grievance committee. In the first place it should not be labeled a "grievance committee," because, from the start, it should have duties beyond those of simply investigating complaints. It should be empowered to initiate its own investigations concerning professional conduct. It should be able to prosecute serious offenses before a judicial body. From the hearing of complaints, their investigation, and their prosecution, the board becomes a repository of a great deal of information that would be lost if it were not to carry on an educational program in proper professional conduct, in better patient-doctor and doctor-doctor relationships, and, finally, in formulating good public relations for the medical profession.

In setting up a committee on professional conduct, it seems to me that at least four conditions should be fulfilled. It should have: 1. The approval and respect of the members of the state society and the confidence of the public. 2. To function honestly and impartially, it should be an elective body—certainly not honorary—elected by the house of delegates on nomination of the component societies. In our set-up, the board is elected by the house of delegates, but the nominations are made from the component societies with a geographical distribution. There are 12 areas, 6 of which would nominate a member of the board each year. 3. Then the meetings must be held in such a manner that there is no breach of confidence. 4. It should be provided the authority necessary to carry out complete investigations. If the board is to have authority necessary to carry out complete investigations, it must have the power to compel the attendance of the members of the society in order that they can inform the board. It can only invite nonmembers, but the members of the society who refuse to appear can be cited for contempt before our board of councilors.

The Colorado board of supervisors has no power to try a member, and it has no power to impose discipline. It is set up as a division of the judiciary department and can prosecute charges before the board of councilors, which has the disciplinary power, the board of medical examiners, or a criminal court.

Unless the board has publicity, new members entering the state society each year will be unaware of its functions, and older members will become forgetful of its functions. It is important to keep both of these groups informed, and the laity also must be informed of the existence of such a board. Our board averages around 55 cases per year. I say "cases" instead of complaints, because some are from information and are not complaints. The only way that I know that I could present a realistic picture of the operation of our board is to try to give you some hypothetical cases embodying some of the frequently occurring or disturbing problems, with you as the grand jury.

Complaints reach the board via a number of routes, namely, over the telephone to the secretary of the society, by letter from patients, from other agencies, attorneys, the Blue Shield, the A. M. A. Over-charging still comprises about 50% of the complaints received by our board. It formerly was 70%, and we are glad that it has remained at 50% for the last three or four years.

Here is a typical case: The patient went to a doctor with what he felt to be a minor complaint. He was given an examination. He had subsequent treatment, after which he received a bill for $50. The patient felt the bill was too high. He said the treatment did no good anyway. He did not pay his bill. He has never discussed it with the doctor. Now the bill is being turned over to a collection agency.

Our procedure is somewhat like this: A letter is sent to the complainant stating that an investigation is under way, frequently mentioning the fact that we meet only once a month and it may be some time before he has a complete report. If indicated, the complainant is advised to appear in person before the board. Then a letter goes to the doctor stating the nature of the complaint and requesting information regarding the case. If it is felt necessary, he is asked to appear before the next meeting of the board. In a case such as I have just described, a request is made for an itemized bill. We frequently ask the doctor in the letter if he wishes to call in the patient and attempt to make some amicable adjustment himself. Frequently, our letter to the doctor is his first information that there has been a complaint registered against him. If the bill is already in the hands of the collector, we have sometimes been successful in asking the doctor to request delaying action pending our investigation. Sometimes, we have asked the collector ourselves if he would delay the action.

Now, what can be learned from a case like this? In the first place, the itemized bill from the doctor may show the fee to have been entirely commensurate with services rendered, the type of treatment, and the type of studies. If the doctor had rendered an itemized bill in the first place, or had taken three minutes to explain the need for certain examinations and the cost of the medication and treatment, the complaint would never have arisen. In such a case, the patient is so advised and told that his bill should be paid.

Another possibility is that the patient is a "deadbeat." He has made no attempt to pay the bill. He has made no attempt to discuss it with the doctor. He may be complaining now only because legal steps are taken to collect it. When the patient complains that the treatment did no good anyway, it is the feeling of our board that the doctor would do well to become his own public relations officer and reconsider his fee in view of the results obtained. Recently, we have had two complaints

of patients who have employed an obstetrician and, as sometimes happens, the baby was born before the arrival of the obstetrician. We took this matter up with our state society of obstetricians, and they maintain that, when they accept a case, if the birth is precipitate and they are unable to get there in time, they still have assumed full responsibility of the case and they are, therefore, justified in collecting their full fee. The patients do not agree.

We feel that the most serious charge that reaches our board is that of neglect of a patient. Here is a typical case: A pathetic widow appears before the board. Her husband was a retired school teacher who had been able to do some substitution work. The family doctor had become concerned about his condition sufficiently that he had asked an internist to hospitalize the man for study because he felt it could not be done on an outpatient basis. The patient went to the hospital at 3 p. m. He had not yet been seen by the doctor at 7:30, and his wife called the physician's home. The doctor examined the patient at about 8 p. m., felt that his condition was not serious, and so informed the wife. The patient had a bad night and was not seen the next morning. In the middle of the afternoon, it was necessary for the house physician to attend the patient. By evening, it was necessary to call in a urologist for catheterization, which was difficult and required an anesthetic. The wife then talked to the physician in charge, and the patient seemed to be doing all right, but, by 1 o'clock in the morning, he had convulsions, and he was dead at the time the physician arrived at the hospital.

Now, on the surface, this would sound like a serious complaint, and it certainly sounds as if there were neglect of the patient involved, so the physician was asked to appear before the board. His story was considerably different from that of the widow. The nurse had informed him at his office of the arrival of the patient at the hospital, stating that his condition seemed good. His usual practice was to go to the hospital before dinner, but in this case he had his dinner and then went to the hospital. He checked the man and felt his condition was relatively good, but, on his arrival at the hospital the next morning, he found that the man had considerably more severe congestive failure than he had realized, and he discussed it with the house physician and started administration of a mercurial diuretic, telling the house physician that he might run into trouble because of urinary difficulties. The house physician was able to catheterize the man after his diuresis started with considerable difficulty, and by evening it was necessary for a urologist to see the man. He required an anesthetic for the insertion of a retention catheter. The patient responded, but at 1:30 went into convulsions and died within 10 minutes.

Certainly in such a case, there is no evidence of gross neglect of the patient. The wife was not aware of a good many of the doctor's visits to her husband. We do think, however, that the doctor made some mistakes. He certainly should have seen the patient before six hours had elapsed. He made a common mistake of telling the family that the patient's condition was good. In this case, the widow had gone over the course of events with her son and with her attorney because it was felt that her husband was in relatively good condition, and yet in 36 hours he was dead.

Someone has asked me how much should be included in a letter that states the final action of a mediation committee. In a case like this, a letter to the widow will state that we had investigated the case, the hospital records were checked, and witnesses were questioned, and it was the feeling of the board that there was no neglect, that her husband had received adequate medical treatment. In a case like this, certainly more detailed information will have to go either to the son or to the attorney.

One of our problems at present, and certainly a problem that would concern a meeting of this type, is that of individual publicity that smacks of advertising. The Code of Medical Ethics states that solicitation of patients, either directly or indirectly, is not ethical. Colleagues are particularly critical when the name of some doctor appears too frequently in the press, and the distinction between what is ethical and what is not ethical becomes very fine.

Here is a case of a clinic that made an announcement in the papers of its opening. The group actually consisted of 4 full-time members, 3 part-time doctors, but the announcement also listed 14 of the leading consulting specialists who had agreed to see patients referred by the clinic, but in their own offices and rendering their own bills.

The newspapers felt that the opening of the clinic was newsworthy. They called it a business-type article, and they played it up to a three-column spread with pictures, and they captioned it, "Mayo Type Clinic Is Opened." The board investigation revealed that the information had been requested by the papers and it had been gladly given and in much detail by the clinic. The idea of the publicity had not been cleared with any public relations committee, and the information furnished by the doctors was not in good taste and was not entirely truthful.

A case similar to the one I have cited appeared before the Colorado State Medical Society's Board of Supervisors and required four months of investigation and the testimony of 36 witnesses. It required the filing of charges with the board of councilors and ended with the successful prosecution of the charges before that board.

I have cited this last type of case for two reasons. I feel that it shows that our board of supervisors is a mediation committee with teeth, and this type of case concerned with personal publicity that smacks of solicitation of patients has so many ramifications that it should be a good one to discuss at a meeting such as this devoted to public relations.

Address of Dr. Henry V. Weinert, Chairman, Tissue Committee, St. Mary's Hospital, Passaic, N. J.

To orient and evaluate the population and bed capacities of the geographical areas that the members of this conference reside in with ours, I would like to specify that there are available in Passaic, N. J., three hospitals: St. Mary's with 192 beds, the Passaic General with 234 beds, and the Beth Israel with 60 beds, all combined, serving an area with a population of 275,000.

In 1946, St. Mary's Hospital was assigned a new Administrator, Sister Eileen Teresa. After completing her studies in nursing, she served as an assistant to the previous administrator. In these capacities, she came into direct contact with patients and public, and thus a fund of information and facts concerning existing surgical practices was made available to her. It was, therefore, not difficult for her to evaluate situations and to differentiate proper from improper practices.

Correction of irregularities was decided on and instituted. After lesser improprieties were corrected, the major blemishes of the profession, which were then just beginning to receive unfavorable publicity, were attacked. Among these were the practices of fee splitting, ghost surgery, and unnecessary surgery. Sister Eileen decided that this institution would not be a workshop for physicians who did not respect the dignity of the hospital or consider the economic and personal inconveniences of the public when indulging in these abuses. The lack of a hospital in which to perform surgery on poorly workedup cases, or patients with questionable need for surgery will of necessity eliminate most of these unethical practices.

Fee splitting was managed by insistence on the method devised and recommended by the College of Surgeons. Any additional safeguard in the control of this very difficult problem, we felt, would be helpful. All physicians were therefore graded so that there could not be no doubt as to which operative procedures they were capable of performing or merely assisting in. The recording of the surgeon and assistants on the operative record, according to their grading by the administration, thus forms the basis on which billing for services according to the College of Surgeons rules are made.

The remaining two evils, ghost surgery and unnecessary surgery, required the setting up of legislation, i. e., rules, inspection, and enforcement, as is familiarly done to combat irregularities. A strict set of rules was formulated. Any hospital planning a tissue committee should first formulate this legislation as a basic necessity. Without surgical control rules, the tissue committee could only review cases of absent or minimal

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pathology which would, indeed, be a poor surgical audit and certainly would not prevent ghost or unnecessary surgery. The tissue committee then becomes the inspection or policing agency, and its findings can be transmitted to properly designated authority for correction of irregularities.

The rules so adopted required, among other details, compulsory preoperative consultation in such procedures as dilatation and curettage, hysterectomy, uterine suspensions, lysis of adhesions, herniation of intervertebral disks, and all procedures specified in the Catholic Code of Ethics. The rules further made it mandatory that the physician, to be recorded as the operating surgeon in the case, personally interview and examine the patient and prescribe treatment personally. Strict adherence to these rules and verification by the Administration that they are fulfilled must lead to a complete eradication of ghost surgery.

Having completed our rules program, we embarked on the method of inspection, that is, auditing. A communication addressed to Dr. Malcolm MacEachern requesting information on this problem brought the following response, dated April 25, 1949: "The American College of Surgeons does not have a bulletin on the subject, although we hope to have one in the near future. The whole idea and plan of a tissue committee is fairly new."

The committee proceeded to devise its own plan. It goes far beyond the review of cases in which the pathologist simply records the removal of normal or minimal pathological areas. It includes also a review of all appendectomies, all reproductive organ surgery, all emergencies, all cases in which definitive surgery was not accomplished, all cases in which there is a marked disparity between preoperative and postoperative diagnosis. By this method, no questionable or unnecessary surgery can escape review and audit, and the compulsion of correction by the erring physician must lead to the abolition of unnecessary surgery.

In November, 1949, the committee held its first audit. Monthly audits have been held since. The information obtained was so instructive and illuminating that I was urged to publish the facts. This was done, and on Nov. 8, 1952, THE JOURNAL published the article entitled "Effectiveness of Hospital Tissue Committee in Raising Surgical Standards," which outlines in detail the procedure to be followed in organizing such a committee. We are reviewing in detail and auditing approximately 1,400 charts yearly.

Prior to committee audit, we found appendectomies averaged 28% of the total surgical cases, of which 20% were found to have minimal or no pathology. This has been reduced, and now appendectomies average 8 to 9% of the total surgery, with 5% of these receiving adverse audit. Most spectacular results were obtained in the category of emergency surgery. Early in our study, we found 29% of emergency surgery lacked pathology or need of surgery. This rapidly fell to 10%, and this year in emergency surgery, averaging 40 cases a month, it is most unusual to find months in which more than one or two cases are recorded unfavorably, which averages 3 to 5%. No longer do we hear in the hospital the complaints and display of anger of the conscientious physician who, while observing a case carefully, or not recommending surgery, found emergency surgery was performed with the removal of a normal organ.

Because of strict consultation demands, procedures such as uterine suspension, lysis of adhesions, and hysterectomies for functional bleeding with no pathology have become a rarity. The greatest improvement occurred after the first summons of physicians for review and censure. To fail to review and insist on improvement from those found derelict would mean that the tissue committee would only amass a great deal of useless paper work.

Good public relations for the medical profession begins and ends with the individual physician. The topic of illness, which eventually involves the physician and, often the hospital, is, without doubt, high on the agenda of family and friendly gatherings. It is not surprising, then, that isolated irregularities and distrusts multiply rapidly, leading to a lessening of respect and trust of the entire profession. It is, therefore, regretful that I must report that we did not obtain the cooperation of the physicians at the outset in this most essential project for bettering public relations. We persisted in our labors and submitted unbiased, truthful reports, instead of white-washed opinions that discouragement could well have initiated. Our forte was complete cooperation of the governing board, without which it is useless to function.

Gradually, the attitude of the physicians improved. We were aided by many factors. The publication of the article brought congratulatory and complimentary replies from nationally prominent physicians, welfare workers, educational institutions, and hospitals. To remove the awe of secrecy and questionable righteousness of the committee, we instituted a program in which two noncommittee member physicians are permitted to sit in at deliberations, at their own request, as guest observers. These observers are our greatest boosters. The director of surgery and president of the medical staff are invited to each meeting.

The announcement to the staff that the Joint Commission on Accreditation of Hospitals will require professional auditing for accreditation broke the final barrier of resistance. Today, we have excellent cooperation by the physicians, with an evident atmosphere of a desire to maintain individual acceptable audit status. So we can conclude that, properly encouraged, physicians will permit self-examination and correction, which is excellent prophylactic therapy for future adverse publicity and another step to good public relations.

THE PHYSICIAN'S FEDERAL INCOME TAX

Federal income taxpayers on a calendar year basis must on or before March 15 do two things: 1. They must file their final returns for the year 1953. 2. They must file a declaration of estimated tax for 1954.

Copies of appropriate forms have already been distributed to prior taxpayers, together with a small booklet which presents the general requirements of the law. Physicians who are for the first time subject to the requirements of the federal income tax law may obtain the necessary forms from the office of the Director of Internal Revenue having jurisdiction.

GROSS INCOME

A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, assuming that the return is on a cash receipts and disbursements basis, plus such money as he has received from investments and from other sources.

If a physician receives a salary as compensation for services rendered and in addition thereto living quarters or meals, the value to the physician of the quarters and meals so furnished ordinarily constitutes income subject to tax. If, however, living quarters or meals are furnished for the convenience of the employer, the value thereof need not be computed and added to the compensation otherwise received by the physician unless such quarters and meals are furnished as a part of compensation.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. As far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in such dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a

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physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service, and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs, and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture, and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted, but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical, and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment, and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal, or average rates of depreciation, the following percentages have been suggested: automobiles, 25% a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments, and diagnostic apparatus, 10% a year; office furniture, 5% a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the average value of the article at the end of its useful life, shall not be greater than its purchase price. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in each case.

Dues.—Dues paid to societies of strictly professional nature are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are generally held to constitute personal expenses and as such are not deductible. If, however, membership in social organizations, such as a country club, is maintained both for personal and professional or business purposes and if evidence can be produced to substantiate the claim that a part of the expenses of such membership was incurred for business purposes, then it would seem that these latter expenses would be deductible. Further discussion of this particular aspect of the federal law will be found in a subsequent paragraph dealing with the deductibility of entertainment expenses.

Postgraduate Study.—The U. S. Court of Appeals, Second Circuit, in the case of Coughlin v. Commissioner of Internal Revenue (203 F. [2d] 307) held, on April 14, 1953, that the taxpayer, a lawyer, could deduct for federal income tax purposes expenses incurred by him in attending a postgraduate course on taxation. The government did not appeal this decision, and the time within which an appeal could have been effected expired 90 days after the decision date. Tax counsel advises:

"The decision of the Circuit Court is not confined to lawyers. It equally applies to the practicing physician who attends postgraduate courses which are similarly designed to refresh his medical knowledge and to keep him informed of recent medical developments. Therefore, in computing his federal income tax a doctor may deduct the expenses of his attendance, namely, the cost of his tuition, travel, board, and lodging.

"However, it is by no means clear that the court's decision covers attendance at postgraduate courses which are designed to advance the doctor into a new area of his profession. For example, there is a good deal of doubt whether a general practitioner may deduct his expenses in attending a postgraduate course in order to specialize in surgery. But this would be the unusual case. Normally, a doctor attends a postgraduate course relevant to the field in which he is practicing and all the expenses which he so incurs are deductible by him."

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals, and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Entertainment Expenses.—The deductibility of entertainment expenses, when incurred for business purposes, has been upheld, as applied to an actor, in the case of *Blakmer v. Commissioner*, 70 F. (2d) 255. In the case of *Jacobson*, 6 T.C. 1048, the taxpayer was allowed a deduction of expenses incurred for entertaining clients and employees of his law firm. The deductibility of such expenses by an attorney came before the U. S. Tax Court in the case of *Clyde A. Armstrong v. Commissioner*, decided Aug. 29, 1947, 6 TCM 997. In a memorandum opinion rendered by Judge Opper, this was said:

Taxpayer, a Pittsburgh attorney, became a member of the University Club and the Duquesne Club in order to have available facilities for the entertainment of his clients; his purpose in joining the clubs was not particularly to make contacts productive of new business. In 1942, 1943, and 1944 the Commissioner disallowed deductions representing club dues, but allowed 50% of the house bills incurred by taxpayer at each of the clubs during those years. The court finds that taxpayer used the club facilities not less than 50% of the time for entertaining clients and other purposes incident to the practice of his profession, and allows the deduction of dues to that extent.

In the December, 1948, issue of the *Medical Annals of the District of Columbia*, page 697, there was published correspondence that had passed between the secretary of the Medical Society of the District of Columbia and the Internal Revenue Agent in the Baltimore Division, Treasury Department, in which the latter stated that if entertainment expenses incurred by a physician have a direct relation to the production of income, and can be supported by the taxpayer, they will be taken into consideration in determining his net taxable income.

Directors of Internal Revenue in several jurisdictions have questioned the right of physicians to deduct entertainment expenses, contending that it is unethical for a physician to make expenditures of this character. The Judicial Council of the Association, in its report to the House of Delegates at the Los Angeles, 1951, meeting said in part:

"The Council does not consider such expenditures as *per se* unethical. There are circumstances under which a professional obligation may rest on a physician to entertain other physicians. It is a usual and necessary concomitant of the practice of medicine. It is certainly not an uncommon practice and is recognized by the profession generally as entirely proper and justifiable." This report was approved by the House of Delegates (*J. A. M. A.* **147**:1686, Dec. 22, 1951).

Expenses Incurred by Members of the Auxiliary.—Two applications have been filed with the Office of the Commissioner of Internal Revenue, one on behalf of the American Medical Association and one on behalf of the Woman's Auxiliary, asking for a ruling on the deductibility of expenses incurred by members of the Auxiliary in attending official meetings. In each case the requested ruling was withheld for the principal reason that neither the Association nor the Auxiliary was a taxpayer whose tax liability would be affected by the ruling requested. In response to the petition of the Auxiliary, however, a communication from the Office of the Commissioner stated as follows:

"Since the question of whether the expenses incurred by the members of the Auxiliary in attending the conventions and other meetings are deductible under section 23(a)(1)(A) of the Internal Revenue Code depends upon the facts in each particular case, a general ruling applicable to all members of the Auxiliary may not be made.

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"A taxpayer claiming the benefit of the deduction of such expenses must attach to his return a statement showing (1) the nature of the business in which engaged; (2) the number of days away from home during the taxable year on account of business; (3) the total amount of expenses incident to meals and lodging while absent from home on business during the taxable year; and (4) the total amount of other expenses incident to travel claimed as a deduction.

"Claims for deduction of such expenses must be substantiated, when required by the Commissioner, by evidence showing in detail the amount and nature of the expenses."

Automobiles.—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeur's wages, and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is possessed by the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood. What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

Surgical Uniforms.—Amounts expended by surgeons for the purchase and maintenance of distinctive types of uniforms which are not adaptable to ordinary wear and which are required to be worn while on duty are deductible as ordinary and necessary business expenses.

MISCELLANEOUS

Contributions to Charitable Organizations.—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the directors of internal revenue or from other reliable sources. An individual taxpayer can deduct such contributions only to the extent that they do not exceed 20% of his adjusted gross income. The physician may not deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes. It has been held that blood donated by a person to a charitable institution for a transfusion, or to a blood bank, is not property and the fair market value of the blood is not deductible as a charitable contribution.

Bad Debts.—Physicians who make their returns on a cash receipts and disbursements basis, as most physicians do, cannot claim deductions for bad debts.

Taxes.—Taxes generally, either federal or state, are deductible by the person on whom they are imposed by law. Both real and personal property taxes are deductible; but so-called taxes, more properly assessments, paid for local benefits, such as street, sidewalk, and other like improvements, imposed because of and measured by some benefit inuring directly to the property against which the assessment is levied, do not constitute an allowable deduction from gross income. Physicians may deduct state gasoline taxes and state sales taxes. In some states sales taxes are imposed on the seller, but if they are passed on to the buyer the latter may deduct them.

State income and use taxes are deductible; federal income taxes are not. Federal import, excise, or stamp taxes are deductible only to the extent that they are attributable to business activities. State automobile license fees are deductible. If a state or local fee is imposed for regulatory purposes, and not to raise revenue, the fee may not ordinarily be deducted as a tax. If such fees, however, are classifiable as a business expense they are deductible as such. Annual registration fees imposed on physicians probably come within the category of regulatory fees and should be deducted as a business expense rather than as taxes. Local and state occupational taxes imposed on physicians are deductible either as taxes or as a business expense, depending on the purpose for which the tax is imposed.

The excise taxes imposed on employers by section 804, title VIII, and section 901, title IX, of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withhold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Medical Expense.—A taxpayer may deduct amounts in excess of 5% of adjusted gross income expended for medical, dental and hospital expense for himself, his spouse or a dependent, not compensated for by insurance or otherwise, including amounts paid for health and accident insurance, according to a prescribed formula. This 5% limitation does not apply with respect to medical expenses for the care of the taxpayer or his spouse if either has reached the age of 65 before the close of the year. The law limits the deduction to a maximum of (*a*) $1,250 if the taxpayer claims only one exemption; (*b*) $2,500 if the taxpayer is a single person or if married and filing a separate return and claims more than one exemption; (*c*) $2,500 if the taxpayers are married and file a joint return and claim two exemptions, $3,750 if three exemptions are claimed and $5,000 if four or more exemptions are claimed. It has been held that the cost of installing a stair seat elevator in a home, necessitated by a heart condition, does not constitute a deductible medical expense. Fees paid to qualified psychologists for therapeutic treatment are deductible as medical expenses. If a practical nurse is hired on the advice of a taxpayer's physician, the nurse residing in the taxpayer's home, her compensation is attributable to medical care and not to personal services. According to a ruling of the Bureau of Internal Revenue that part of the premium of a health and accident insurance policy that purchases insurance providing reimbursement to the insured for loss of earnings is not deductible as a medical expense.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

MEDICAL NEWS

ARKANSAS

Medicine and Crime Detection.—A dinner meeting for lawyers, physicians, F. B. I. men, police officers, judges, sheriffs, coroners, prosecuting attorneys, and others interested will be held Feb. 9, 6:30 p. m., at the Camden Hotel in Camden (plate charge, $3). The meeting, which is sponsored by Dr. R. B. Robins of Camden, will be addressed by Dr. Charles P. Larson, associate clinical professor of pathology, University of Washington School of Medicine, Seattle, who will present an illustrated lecture "Crime Detection by Scientific Medicine." Dr. Larson is chairman of the committee on forensic pathology for the College of American Pathologists and during World War II was chief pathologist for the War Crimes Commission in Southern Germany. He is also director of the Tacoma Police Department Laboratory and pathologist for the Tacoma General Hospital.

ILLINOIS

Illinois Appoints Medical Dean.—Dr. Granville A. Bennett, professor of pathology, University of Illinois College of Medicine, Chicago, has been appointed dean of the college and will assume those duties in the spring. Dr. Roger A. Harvey, who has been acting dean since Jan. 1, 1953, will return full-time to his position as professor of radiology and head of the department, and radiologist in chief of the Research and Educational Hospitals, for which Dr. Bennett presently serves as pathologist in chief. Dr. Bennett, who has been head of the department of pathology since 1944, is chief editor of the *A. M. A. Archives of Pathology*. He is consultant to the Armed Forces Institute of Pathology, consultant in pathology to La Rabida Jackson Park Sanitarium, Chicago, a member of the council of the American Association of Pathologists and Bacteriologists, and a member of the executive committee of the Institute of Medical Education. Before coming to Chicago in 1944, he was head of the department of pathology and bacteriology at Tulane University of Louisiana School of Medicine, New Orleans, and taught at Harvard Medical School, Boston, from 1927 to 1943. Dr. Bennett's research interests have been concerned chiefly with diseases of the skeletal system. He is a past president of the Chicago Pathological Society, the Illinois Society of Pathologists, the American Association of Medical Museums, and the New England Pathological Society and is a fellow of the College of American Pathologists.

Chicago

Course in Bronchoesophagology.—This course will be given by the University of Illinois College of Medicine March 22 to April 3 under the direction of Dr. Paul H. Holinger. Registrants should contact the department of otolaryngology, University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12.

Meeting of Neurosurgeons.—The Interurban Neurosurgical Society will present the following program, which will be heard by invitation only, at 9 a. m. Feb. 13 at the University Club of Chicago:

Anterior Choroidal Artery Occlusion in Parkinsonism, Irving S. Cooper, Bronxville, N. Y.
Pressures in the Cervical Carotid and Intracranial Arteries, William H. Sweet, Boston.
Concept of Temporal Lobe Epilepsy, Herbert H. Jasper, Montreal, Canada.
Craniopagus, Oscar Sugar, Chicago.

Round-Table Discussions on Cancer.—A series of round-table discussions on cancer is being presented by the University of Chicago under the auspices of the Cancer Coordinator's Program. Students, faculty, residents, and the profession-at-large are cordially invited to attend. The following sessions will be held Monday afternoons at 5 o'clock in Billings Hospital, Room P-117:

Feb. 8, Cancer of the Breast.
Feb. 15, Tumors of the Uterus and Ovary.
Feb. 22, Cancer of the Cervix.
March 1, Tumors of the Mouth, Tongue, Jaw, and Salivary Glands.
March 8, Tumors of the Bladder, Prostate, and Testes.
March 15, Tumors of the Small Bowel, Colon, and Rectum.

MICHIGAN

State Medical Election.—At the annual meeting in Grand Rapids Dr. Leroy W. Hull, Detroit, assumed the presidency of the Michigan State Medical Society; Dr. Robert H. Baker, Pontiac, was named president-elect; Dr. L. Fernald Foster, Bay City, secretary; and Dr. William A. Hyland, Grand Rapids, treasurer.

Symposium on Office Procedures.—The Symposium on Office Procedures, Feb. 10, at the Sheraton-Cadillac Hotel, Detroit, is open to anyone conducting an office practice. The topics include "Anesthesia in the Office," "Cardiology for the General Practitioner," "Pediatric Immunization Procedures," "Perivascular Diseases," "Industrial Surgery," "O. B. and Gyn. in the Office," and "Laboratory Procedures." The panel system will be used, with questions from the audience at the end of the morning and afternoon sessions. Dr. Arch Walls, Detroit, will serve as moderator in the morning and Dr. Ralph Johnson, Detroit, in the afternoon. Dr. William Bromme, Detroit, will be the speaker at the complimentary luncheon. Dr. Francis P. Rhoades, Detroit, chairman, educational committee, Wayne County Academy of General Practice, has arranged this medical seminar with the cooperation of the Lederle Laboratories. Formal postgraduate credits will be given to members of the American Academy of General Practice for attendance. A card party with table prizes and refreshments has been arranged from 2 to 5 o'clock at the Sheraton-Cadillac for the wives of the physicians attending the symposium. A cocktail party for physicians and their wives will be held at the close of the afternoon session.

NEW YORK

Historical Documents Wanted.—Dr. J. Homer Cudmore, historian of the Medical Society of the County of New York, urges all members who have historical diaries, letters, or other documents on the practice of medicine and the New York County Medical Society in earlier years to communicate with him at the offices of the society, 2 E. 103rd St. (phone ATwater 9-7305). The material is for use in a proposed history of the society.

Meeting on Antihypertensive Drugs.—The New York Society for Circulatory Diseases will meet at 8:30 p. m., Feb. 9, at the New York Academy of Medicine Building for a pharmacological and clinical evaluation of the newer antihypertensive drugs. Among the speakers will be: Dr. Rudolph E. Fremont, chief, cardiovascular department, Veterans Administration Hospital, Brooklyn, and Dr. Milton Mendlowitz, associate attending physician, Mount Sinai Hospital, New York. There will be a panel discussion. Dr. Simon Dack, New York, will preside.

Annual Fracture Day.—The New York and Brooklyn Regional Committee on Trauma of the American College of Surgeons will present the 19th annual Fracture Day Feb. 13 at the Lenox Hill Hospital, 111 E. 76th St., New York. At 10:30 a. m. Dr. John L. Madden, New York, will conduct a symposium on vascular trauma in which Dr. Lester Blum, New York, will give a case presentation on specific arterial injuries; Dr. Jere W. Lord, New York, will present "Arterial Grafts and Their Use Relative to Blood Vessel Trauma"; and Dr. Gerald H. Pratt, New York, will discuss "The Surgical Management of

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

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Blood Vessel Trauma, Both Early and Late." At 2:30 p. m. Dr. Robert H. Kennedy, New York, will serve as conductor for a symposium on intramedullary nailing of fractures. Fractures of the forearm will be discussed by Dr. Frederick H. Vom Saal, New York; fractures of the humerus by Dr. Robert Green, Philadelphia; fractures of the tibia by Dr. Frederick M. Marek, New York; and fractures of the femur by Dr. Sawnie R. Gaston, New York. Other presentations include:

Ancillary Care of the Fracture Patient, Nutrition, Electrolyte Balance, etc., James A. Nicholas, New York.
Treatment of Acute Facial Trauma, Arthur J. Barsky, New York.
Indications and Contraindications for Early Use of Artificial Hip Prosthesis, Frederick R. Thompson, New York.
Management of Bone Cysts, J. Earl Miles, Brooklyn.
Early Recognition of Impending Nonunion, William H. Cassebaum, New York.

New York City

Lecture on Congenital Heart Disease.—Dr. Thomas F. McDermott Jr., professor of anesthesiology, Georgetown University Medical Center, Washington, D. C., will address the anesthesiology staff of the Columbia-Presbyterian Medical Center Feb. 11 on congenital heart disease.

Memorial to Joseph Goldberger.—A film depicting the life of the late Dr. Joseph Goldberger and his successful struggle to combat and cure pellagra was recently previewed at the New York University-Bellevue Medical Center at a private showing for Mrs. Mary Farrar Goldberger, wife of the late Dr. Goldberger; members of the Goldberger family; and faculty of the college. Dr. Currier McEwen, dean of the college, accepted a copy of the film for use by students of the college from the DuPont Company. The preview was held in advance of the public performance that appeared on "Cavalcade of America" Jan. 12.

In recognition of Dr. Goldberger's contributions to medical science, a laboratory, named in his honor, for the investigation of nutritional and metabolic diseases is now being planned at his alma mater, the New York University College of Medicine. The size and equipment of this laboratory, to be located in the new medical science building of New York University-Bellevue Medical Center, will depend on the funds subscribed to construct and support it.

OHIO

Narcotic Violation.—Dr. Milan D. Chepko, Toledo, pleaded guilty in the U. S. District Court at Toledo to a charge of violating the federal narcotic law and on Nov. 10, 1953, was sentenced to serve a term of two years.

Steubenville Academy Series.—In its series of monthly lectures the Academy of Medicine, meeting in the Fort Steuben Hotel, Steubenville, Feb. 9, will hear "Surgical Aspects of Heart Disease" by Dr. Harold Feil, Cleveland. Physicians, interns, and graduate nurses are invited. Information may be obtained from Dr. Edward B. Weinman, secretary-treasurer, National Exchange Bank Building, Steubenville.

PENNSYLVANIA

Society News.—The Pennsylvania Public Health Association recently elected Dr. Mildred C. J. Pfeiffer, Philadelphia, as president, Dr. J. Thomas Millington, Kingston, Pa., president-elect, Dr. Merl G. Colvin, Williamsport, vice-president, and Robert Conn, Harrisburg, Pa., secretary-treasurer.——The Medical Society of the State of Pennsylvania, which annually presents testimonial plaques to 100-year-old residents of the state, requests that the names, addresses, and dates of birth of residents who will become centenarians during 1954 be sent to the society headquarters, 230 State St., Harrisburg. Handlettered, framed testimonials will be presented to the centenarians by officers of the medical society of the county in which they live.——On Feb. 16 Dr. Louis A. Krause, professor of medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, will discuss "Medicine and the Bible" before the Allegheny County Medical Society meeting (225 Jenkins Building, Pittsburgh).

Pittsburgh

Residencies in Allergy.—The Medical Center, University of Pittsburgh School of Medicine, and the U. S. Veterans Hospital, Pittsburgh, announce several openings for a one year residency in allergy. This includes clinical and laboratory training as well as teaching experience. Salary, $1,500-$3,300 per annum. Address inquiries to Dr. Leo H. Criep, The Bigelow, Pittsburgh 19.

SOUTH CAROLINA

Deaths from Rabies.—According to the U. S. Public Health Service, a boy who was bitten severely on the face by a dog that was proved rabid by laboratory examination was given an antirabies vaccination the same day, was admitted to a hospital on the day of the last vaccination, but died two days later. The rabies virus was isolated. On recommendation of a family physician, a girl who had played with a dog that was killed the first week in December but was not examined for rabies was given antirabies treatment although she had not been bitten. Treatment was begun Dec. 8, 1953, and on the ninth day the child was admitted to a hospital, where a diagnosis of rabies encephalitis was made. She died five days later.

TENNESSEE

Society News.—The Nashville Surgical Society recently elected Dr. Eugene M. Regen, president; Dr. Cleo M. Miller, vice-president; and Dr. Ray O. Fessey, secretary-treasurer.——Dr. Jewell M. Dorris has been elected president of the Memphis Surgical Society. Dr. Robert M. Pool is vice-president, and Dr. J. Malcolm Aste, secretary-treasurer.

Meeting of Ophthalmologists and Otolaryngologists.—The Memphis Society of Ophthalmology and Otolaryngology will hold its annual convention Feb. 6-8. Guest speakers will be Drs. Daniel B. Kirby, Charles A. Perera, and John M. Converse, all of New York; Dr. Lewis F. Morrison, San Francisco; Dr. Jerome A. Hilger, St. Paul; and Dr. Kenneth C. Swan, Portland, Ore.

WISCONSIN

Meeting on Heart Disease.—Through a grant from the Lucy Ann Droessel memorial fund, a meeting on heart disease will be held Feb. 11 under the cosponsorship of the Medical Society of Milwaukee County and the Wisconsin Heart Association. The speakers will be Drs. James C. Paterson, Collip Medical Research Laboratory, University of Western Ontario, London, Canada; Nelson W. Barker, Mayo Clinic, Rochester, Minn.; and Jeremiah Stamler, Michael Reese Hospital, Chicago. All Wisconsin physicians are invited.

Scholarships for Course at Trudeau School.—The Wisconsin Anti-Tuberculosis Association offers two scholarships to Wisconsin physicians for a four week course in tuberculosis and other chronic chest diseases. Scholarships, which are open to recent graduates of approved medical schools, include a tuition fee of $100, transportation to Saranac Lake, N. Y., and return, and full maintenance (a total of $500, of which $250 is to be returned to the Wisconsin Anti-Tuberculosis Association within five years). The course will be conducted by the Trudeau School of Tuberculosis at Saranac Lake, May 31 to June 25. Veterans desiring to take advantage of the G. I. Bill of Rights rather than the scholarships should clear their registration with the Veterans Administration before the session opens. Application for scholarship must be in the hands of the committee by March 1. For application blank, write to Dr. Arthur A. Pleyte, Wisconsin Anti-Tuberculosis Association, 1018 N. Jefferson St., Milwaukee 2.

HAWAII

Society News.—At a recent meeting of the Honolulu Pediatric Society, the following officers were elected: Dr. John H. Peyton, president; Dr. Goonzo Yamashita, recording secretary; and Dr. Howard M. Sexton, corresponding secretary-treasurer.

GENERAL

Association of Public Health Physicians.—The Committee to Promote the Formation of an American Association of Public Health Physicians will meet at the Palmer House in Chicago, 8:30 a. m., Feb. 6, to adopt a constitution and bylaws, elect executive officers, and take other steps incident to the organization of the association. It is anticipated that the first annual meeting will be held in Buffalo during the meeting of the American Public Health Association, Oct. 31-Nov.

Meeting of University Surgeons.—The Society of University Surgeons will hold its annual meeting Feb. 13-15 in Rochester, N. Y. The Thursday sessions will be held in Whipple Auditorium, University of Rochester School of Medicine and Dentistry, for which buses will leave the Sheraton Hotel at 9 a. m. The Thursday session will conclude at 4:30 p. m. with a demonstration of cardiovascular[illegible]. A dinner dance will be held at the Genesee Valley Club, 7 p. m. Friday meetings will be conducted at the Starlite Room of the Sheraton Hotel, at 9 a. m. cocktails for members and their wives will precede dinner for members in dinner jackets in the ballroom, and a dinner for wives in the Crown Room. The sessions will end on Saturday at noon, the morning session being started with a presentation on metabolic alterations in surgical patients, in which the influence of peritonitis on nitrogen, carbohydrate, electrolyte, and water balance will be discussed.

Meeting of Pathologists in Detroit.—A joint meeting of the North Central Region of the College of American Pathologists and the Michigan Pathological Society will be held at Henry Ford Hospital, Detroit, Feb. 17. A round table on cytology of the female genital tract will be presented at 11:30 a. m. by Gardner W. Riley, Ph.D., Ann Arbor, Mich., and Drs. James W. Reagan, Cleveland, Israel Davidsohn, Chicago, Arthur T. Hertig, Boston, and Donald C. Beaver, Detroit. At 2 p. m. Dr. Hertig will serve as moderator for a seminar "Obstetrical and Gynecological Pathology." Other presentations include:

Minor Signs in the Cytologic Diagnosis of Uterine Cancer, Gardner W. Riley, Ph.D., Ann Arbor, Mich.
Cellular Changes in Uterine Cancers and Associated Epithelial Lesions, James W. Reagan, Cleveland.
Immunologic and Serologic Aspects of Hemolytic Disease of the Newborn. The Birth of a New Discipline: Immunohematology, Israel Davidsohn, Chicago.

The banquet will be held at 6 p. m.

World Heart Congress in Washington.—A combined meeting of the 2nd World Congress of Cardiology and the 27th Scientific Sessions of the American Heart Association, the first international medical gathering of its kind in the United States, will be held Sept. 12-17 in Washington, D. C., under the presidency of Dr. Paul D. White, Boston. Membership in the congress is open to all members of the affiliated national cardiac societies and associations of the world, and to other physicians and scientific workers of comparable status residing in countries where national cardiac societies are not as yet established. Nonmembers are invited to attend the congress by special invitation from the Organizational Committee. Applications must be received at the congress office no later than March 1. Titles and abstracts of papers from the United States and Canada must be received on or before April 1 by Dr. Charles D. Marple, medical director, American Heart Association, 44 E. 23rd St., New York 10. Contributors from countries outside the United States are required to submit titles with abstracts, which may be accompanied by translations in French, Spanish or German, to the secretaries of their national cardiological societies as soon as possible, since the deadline for these to be received in the United States is March 1. A booklet containing detailed information may be obtained by writing to Dr. L. W. Gorham, Secretary-General, Second World Congress of Cardiology, 44 E. 23rd St., New York 10. Scientific and industrial exhibits have been planned. Industrial firms interested in presenting exhibits may communicate with Steven K. Herlitz, Exhibits Manager, 280 Madison Ave., New York 16.

Occupational Medicine Meeting in Richmond.—The American Academy of Occupational Medicine will hold its annual meeting at the John Marshall Hotel, Richmond, Va., Feb. 11-12. The morning session will open with presentations of "Use of Benzene Acid in Prevention of Heat Exhaustion" by Dr. Burton E. Peck, Tennessee Eastman Plant, Richmond, Va., and "Abnormal Physiology of the Kidney and Liver in Acute Chemical Toxemia" by Dr. John H. Prausnitz, director of medical research, E. I. duPont de Nemours & Company, Wilmington, Del. It will close with "Use of the Chemical Protective Suit" by Dr. Edgar E. Evans, medical supervisor, duPont Chambers Works, Deepwater, N. J., which will be preceded by "The Pathology of Deafness Due to Noise" by Stacy R. Guild, Ph.D., associate professor of otology, Johns Hopkins Hospital, Baltimore. Dr. Frederick W. Deichmann and Dr. Gerald Gerstner, duPont Medical Division, Wilmington, Del., will open the afternoon session with "Effective Discipline Promotes Mental Health," which will be followed by a presentation, "Dr. James Else, appears for the Defense (Rx vs. Law)," by Carl Gauthier of the legal department, E. I. duPont de Nemours & Company. The business meeting, 4:30 p. m., will be preceded by "The Place of Manipulative Therapy in Medicine with Emphasis on Low Back Pain," by John McWilliam Mennell, M.D., Richmond, Friday, 9 a. m., buses will leave the John Marshall Hotel for the Sheltering Pines sanitorium, where the program will be continued. Luncheon at the plant cafeteria will be followed by a tour through the rayon and cellophane plants. The A. L. Robins Pharmaceutical Company of Richmond will be hosts Saturday for a trip to Williamsburg, if sufficient members are interested. The bus will leave around 9 a. m. and return to Richmond between 3 and 4 p. m.

Mid-South Postgraduate Assembly.—The Mid-South Postgraduate Medical Assembly will hold its annual session at the Hotel Peabody, Memphis, Tenn., Feb. 9-12. Guest speakers and their first presentations include:

Gallbladder Disease, Warren H. Cole, Chicago.
Serious Eye Diseases in Infants, Kenneth C. Swan, Portland, Ore.
Management of Cardiac Arrest (colored motion picture), Henry Swan II, Denver.
Curative Forms of Heart Disease, A. Carlton Ernstene, Cleveland.
Hemorrhage in Pregnancy, Charles E. Galloway, Evanston, Ill.
Abuse of the Ear Is as in Chronic Running Ears, Especially in Children, Lewis P. Morrison, San Francisco.
Management of Disabling Pain in the Hip, Joseph S. Barr, Boston.
Advances in the Field of Pediatrics, Sydney S. Gellis, Boston.
Prevention and Treatment of Complications of Long Term Diabetes, Alexander Marble, Boston.
Simplicity of Biopsy in the Diagnosis of Cancer, Everett D. Sugarbaker, Jefferson City, Mo.
Treatment of Inoperable Carcinoma of the Prostate, Gershon J. Thompson, Rochester, Minn.
Clinical Foundation of Chest Radiology, Robert R. Newell, San Francisco.
Brain Tumors, Bronson S. Ray, New York.
Clinical Aspects of Obstruction of the Small Bowel, James D. Rives, New Orleans.
Problem of Aged Parents, Edward J. Stieglitz, Washington, D. C.
Metabolic Concept of Gynecological Care, Hugh G. Hamilton, Kansas City, Mo.
Rationale of Physiologic Stomach Rest in the Therapy of Peptic Ulcer and the Role of the Newer Pharmacologic Agents, Henry L. Bockus, Philadelphia.
Clinical Features and Diagnosis of the Nonsyphilitic Meningitides, Theodore E. Woodward, Baltimore.
Cerebral Changes in the Newborn, James B. Arey, Philadelphia.

An informal dinner will be held in the ballroom, Thursday, 7:30 p. m., where "The Incredible Dr. Jaks" will discuss "Curiosities of the Mind."

The Mid-South Postgraduate Nurse Anesthetists Assembly and the Tennessee Association of Nurse Anesthetists will hold their convention simultaneously at the Hotel Peabody. Their guest speakers include Drs. Arey, Barr, Galloway, Gellis, Hamilton, Marble, Newell, Ray, Sugarbaker, and Henry Swan. Presentations will also be made by Drs. Robert E. Lawson, Leonard J. Vernon, Mary F. Poe, Memphis, Tenn., and John Adriani, New Orleans.

Scholarship in Lipreading.—Competition for the Kenfield memorial scholarship, awarded annually by the American Hearing Society to a prospective teacher of lipreading, will open March 1. Winner of the annual award is entitled to take

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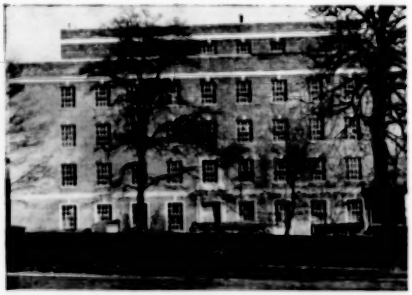
a teaching training course in lipreading from any school or university in the United States acceptable to the teachers committee. The scholarship is to be used within one year from the date of award. Graduation from college with a major in education, psychology, and/or speech is a requirement. Specifications for a hard of hearing contestant include 30 hours of private instruction in lipreading from an approved teacher or 60 hours of lipreading in public school classes under an approved teacher. Rules for competition state that an applicant shall plan to teach lipreading with or without other types of speech or hearing therapy. Application blanks may be obtained by writing to the society's national headquarters, 817-14th St., N.W., Washington 5, D. C., and must be returned by May 1 to Mrs. Eleanor C. Ronnei, care of the New York League for the Hard of Hearing, 480 Lexington Ave., New York 17.

CANADA

Charles H. Best Institute.—The new Charles H. Best Institute at the University of Toronto was officially opened Sept. 15, 1953, when Sir Henry Dale, Nobel laureate and chairman of the scientific advisory committee to the British government, turned a golden key in the door of the new building. The institute, which will house the teaching facilities for the department of physiology, will provide greatly increased research facilities for this department and for the associated Banting



Charles H. Best Institute, University of Toronto.

and Best department of medical research. Among those receiving honorary degrees at a special convocation preceding the opening, were Detlev W. Bronk, Ph.D., director of the Rockefeller Institute for Medical Research, New York; Dr. Elliott P. Joslin, Boston; and Dr. Wilder G. Penfield, Montreal.

LATIN AMERICA

Congress of Physical Medicine.—The Latin-American Congress of Physical Medicine will hold its annual meeting in Medellin, Colombia, Feb. 15-20, after which a tour will be made to Bogota, Barranquilla, and Montega Bay, Jamaica. The trip will end Feb. 28. Transportation at a special all-inclusive rate, via plane or steamship, will be available to those participating. Registration must be made through Dr. Cassius Lopez de Victoria, Executive Director, 176 E. 71st St., New York 21.

Congress of Otorhinolaryngology.—The third Latin American Congress of Otorhinolaryngology will take place at Caracas, Venezuela, Feb. 21-25 under the auspices of the government of Venezuela and the ministry of public health and social aid, with the cooperation of the National Academy of Medicine, the Venezuela Society of Otorhinolaryngology and Ophthalmology, the Venezuela Society of Surgery, and the National Society of Otorhinolaryngology. Topics to be discussed include incidents and accidents of anesthesia and otorhinolaryngology, cancer of the rhinopharynx, surgery of malignant tumors of the pharynx and larynx, and esophagogastric lesions treated by cortisone or corticotropin (ACTH).

FOREIGN

Industrial Meeting in India.—The Society for the Study of Industrial Medicine will hold its annual meeting in Calcutta, India, Feb. 4-6. The society, established six years ago, has a membership of about 450 and branches in Calcutta, Bombay, Madras, and Ahmedabad.

Gynecologic Meeting Place Changed.—The Assises Françaises de Gynécologie, originally scheduled for Dijon, will be held in Paris, July 22-24, to discuss "The Treatment of Genital Prolapse." For information and registration, write to the Secretary General, Robert Senechal, 31 Rue Raynouard, Paris 16e.

Ophthalmological Congress.—The annual congress of the Ophthalmological Society of the United Kingdom will be held at the University of Durham, Newcastle-on-Tyne, England, April 22-24. The subject for discussion will be "Inflammatory Vascular Diseases Affecting the Eyes." There will be also three short symposia on the following subjects: "Cyclodiathermy," "Changes in the Incidence of the Eye Affections of Coal Miners in the Past 25 Years," and "Gonioscopy."

Persian Gulf Medical Society.—The Persian Gulf Medical Society, which held its second annual meeting Dec. 7-8, 1953, chose as president-elect Dr. Neal J. Conan Jr., head of the department of internal medicine, Aramco, Dhahran, Saudi Arabia, and clinical professor of internal medicine, American University of Beirut. The program, which opened with the report "Current Research at Harvard School of Public Health on Major Health Problems of the Middle East" by Dr. John C. Snyder, professor of microbiology, Harvard School of Public Health, Boston, included discussions on surgical treatment of cutaneous leishmaniasis and of hydatid disease, treatment of typhoid fever with thiocymetin, surgical aspects of gastrointestinal tuberculosis, drug prophylaxis against amebiasis, and the injection treatment of hernia. The next annual meeting will be held in December on Bahrain Island.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.
1954 Annual Meeting, San Francisco, June 21-25.
1954 Clinical Meeting, Miami, Florida, Nov. 30-Dec. 3.
1955 Annual Meeting, Atlantic City, N. J., June 6-10.
1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.
1956 Annual Meeting, Chicago, June 11-15.

ANNUAL CONGRESS ON INDUSTRIAL HEALTH, Brown Hotel, Louisville, Ky., Feb. 24-25. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE, Palmer House, Chicago, Feb. 7-9. Dr. Edward L. Turner, 535 N. Dearborn St., Chicago 10, Secretary.

NATIONAL CONFERENCE ON RURAL HEALTH, Baker Hotel, Dallas, Texas, Mar. 4-6. Mrs. Arline Hibbard, 535 N. Dearborn St., Chicago 10, Secretary.

AERO MEDICAL ASSOCIATION, Hotel Statler, Washington, D. C., March 29-31. Dr. Thomas H. Sutherland, P. O. Box 26, Marion, Ohio, Secretary.

AMERICAN ACADEMY OF FORENSIC SCIENCES, Drake Hotel, Chicago, Feb. 25-27. Prof. Ralph F. Turner, Michigan State College Dept. of Police Administration, East Lansing, Mich., Secretary.

AMERICAN ACADEMY OF GENERAL PRACTICE, Cleveland, March 22-25. Mr. Mac F. Cahal, 406 West 34th St., Kansas City 2, Mo., Executive Secretary.

AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE, John Marshall Hotel, Richmond, Va., Feb. 11-12. Dr. Leonard J. Goldwater, 600 W. 168th St., New York 32, Secretary.

AMERICAN HEART ASSOCIATION, Conrad Hilton Hotel, Chicago, April 1-4. Dr. William H. Bunn, 44 East 23d St., New York 10, Secretary.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION, Hotel Commodore, New York, March 11-13. Dr. Marion F. Langer, Room 210, 303 Lexington Ave., New York 16, Executive Secretary.

AMERICAN PROTESTANT HOSPITAL ASSOCIATION, Palmer House, Chicago, Feb. 10-12. Mr. Albert G. Hahn, Protestant Deaconess Hospital, Evansville, Ind., Executive Secretary.

AMERICAN PSYCHOSOMATIC SOCIETY, Jung Hotel, New Orleans, March 27-28. Dr. Theodore Lidz, 333 Cedar St., New Haven 11, Conn., Secretary.

AMERICAN RADIUM SOCIETY, The Homestead, Hot Springs, Va., March 14-16. Dr. Robert E. Fricke, 102 Second Ave. S.W., Rochester, Minn., Secretary.

CENTRAL SURGICAL ASSOCIATION, Statler Hotel, Detroit, Feb. 18-20. Dr. Robert M. Zollinger, University Hospital, Columbus 10, Ohio, Secretary.

CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE, Palmer House, Chicago, March 2-5. Dr. Maurice M. Hoeltgen, 86 East Randolph St., Chicago, Secretary.

DALLAS SOUTHERN CLINICAL SOCIETY, Dallas, March 15-18. Dr. T. Haynes Harvill, 433 Medical Arts Bldg., Dallas 1, Texas, Secretary.

EASTERN SURGICAL SOCIETY, Boston, March 26-27. Dr. J. William Hinton, 130 East 79th St., New York, Secretary.

MICHIGAN CLINICAL INSTITUTE, Sheraton-Cadillac Hotel, Detroit, March 10-12. Dr. L. Fernald Foster, 606 Townsend St., Lansing 15, Mich., Secretary.

MID-SOUTH POST GRADUATE MEDICAL ASSEMBLY, Hotel Peabody, Memphis, Tenn., Feb. 9-12. Dr. Thurman Crawford, 869 Madison Ave., Memphis, Tenn., Secretary.

NATIONAL CONFERENCE ON CARE OF THE LONG-TERM PATIENT, Edgewater Beach Hotel, Chicago, March 18-20. Dr. Dean W. Roberts, 615 N Wolfe St., Baltimore 5, Director.

NATIONAL CONFERENCE ON TRICHINOSIS, A. M. A. Headquarters, Chicago, March 1. Dr. S. E. Gould, Wayne County General Hospital, Eloise, Mich., Chairman.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, Jefferson Hotel, St. Louis, March 10-12. Dr. F. M. Foote, 1790 Broadway, New York 19, Executive Director.

PACIFIC NORTHWEST SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGEONS, Seattle, April 3. Dr. E. E. Banfield, Medical Arts Bldg., Tacoma 2, Wash., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

TOPEKA, KANS., March 19. Dr. William C. Menninger, 3617 West 6th Ave., Topeka, Kansas, Governor.

RICHMOND, VA., Feb. 25. Dr. Charles M. Caravati, 807 West Franklin St., Richmond 20, Va., Governor.

SOUTHERN CALIFORNIA, Riverside, Feb. 13-14. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS:

FRENCH LICK SPRINGS, Indiana, French Lick Springs Hotel, March 15-17. Dr. Carl H. McCaskey, 20 N. Meridian St., Indianapolis 4, Chairman.

MONTREAL, CANADA, Mount Royal Hotel, March 31-April 2. Dr. Harry S. Morton, 900 Sherbrooke St., West, Montreal, Canada, Chairman.

OMAHA, NEB., Hotel Fontenelle, March 1-4. Dr. Earl A. Connolly, 107 South 17th St., Omaha, Chairman.

RENO, NEV., Riverside Hotel, Feb. 25-26. Dr. Kenneth F. Maclean, 120 N. Virginia St., Reno, Nev., Chairman.

SOCIETY OF UNIVERSITY SURGEONS, Sheraton Hotel, Rochester, N. Y., Feb. 11-13. Dr. C. Rollins Hanlon, 1325 South Grand Blvd., St. Louis, Secretary.

SOUTHEASTERN ALLERGY ASSOCIATION, Dinkler-Plaza Hotel, Atlanta, Ga., March 25-27. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 1, S. C., Secretary.

SOUTHEASTERN SURGICAL CONGRESS, Tutwiler Hotel, Birmingham, Ala., March 8-11. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta, Ga., Secretary.

WESTERN SOCIETY OF ELECTRO-ENCEPHALOGRAPHY, Del Monte Lodge, Pebble Beach, Calif., March 7-8. Dr. Sylvester N. Berens, 902 Boren Ave., Seattle, Secretary.

FOREIGN AND INTERNATIONAL

ASSOCIATION OF SURGEONS OF GREAT BRITAIN AND IRELAND, Leeds, England, May 13-15, 1954. Dr. Henry W. S. Wright, 45 Lincoln's Inn Fields, London W.C.2, England, Honorary Secretary.

BRITISH MEDICAL ASSOCIATION, Glasgow, Scotland, July 1-9, 1954. Dr. A. Macrae, B.M.A. House, Tavistock Square, London, W.C.1, England, Secretary.

CANADIAN MEDICAL ASSOCIATION, Vancouver, B. C., Canada, June 14-18, 1954. Dr. T. C. Routley, 244 St. George St., Toronto 5, Ont., Canada, General Secretary.

CONFERENCE OF INTERNATIONAL UNION AGAINST TUBERCULOSIS, Madrid, Spain, Sept. 26-Oct. 2, 1954. Secretariat, Escuela de Tisiologia, Ciudad Universitaria, Madrid, Spain.

CONGRESS OF INTERNATIONAL ASSOCIATION FOR THE PREVENTION OF BLINDNESS, New York, N. Y., U. S. A., Sept. 12-17, 1954. Professor Franceschetti, 2 Avenue Mirmot, Geneva, Switzerland, Secretary-General.

EUROPEAN SOCIETY OF CARDIOVASCULAR SURGERY, Edinburgh, Scotland, July 9-10, 1954. For information address: Mr. A. J. Siessor, Department of Surgery, University New Building, Edinburgh 8, Scotland.

HEALTH CONGRESS OF THE ROYAL SANITARY INSTITUTE, Scarborough, England, April 27-30, 1954. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Los Angeles, Calif., U. S. A., Oct. 4-7, 1954. For information write: Dr. T. H. Seldon, 102-110 Second Avenue S.W., Rochester, Minn., U. S. A.

INTERNATIONAL CANCER CONGRESS, Sao Paulo, Brazil, July 23-29, 1954. Prof. A. Prudente, 171 rua Benjamin Constante, Sao Paulo, Brazil, President.

INTERNATIONAL CONFERENCE ON THROMBOSIS AND EMBOLISM, Basle, Switzerland, July 20-24, 1954. Dr. W. Merz, Chief Medical Officer, Gynecological Clinic, University of Basle, Basle, Switzerland, Hon. Secretary.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Dr. Robert A. Moore, Washington University School of Medicine, St. Louis 10, Mo., U. S. A., Chairman, Committee on Arrangements.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Barcelona, Spain, Oct. 4-8, 1954. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Ill., U. S. A., Executive Secretary.

INTERNATIONAL CONGRESS ON GROUP PSYCHOTHERAPY, Toronto, Ont., Canada, Aug. 12-14, 1954. Dr. J. L. Moreno, Room 327, 101 Park Ave., New York 17, N. Y., U. S. A., Director of Organizing Committee.

INTERNATIONAL CONGRESS ON GYNECOLOGY AND OBSTETRICS, Geneva, Switzerland, July 26-31, 1954. Dr. H. de Watteville, Maternité Hôpital Cantonal, Geneva, Switzerland, President.

INTERNATIONAL CONGRESS OF HEMATOLOGY, Paris, Sept. 6-11, 1954. Dr. Jean Bernard, 86 rue d'Assas, Paris 6e, France, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Rome and Salerno, Italy, Sept. 13-20, 1954. For information write: Segreteria XIV Congresso Internazionale di Storia della Medicina, Instituto di Storia della Medicine, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS OF HYDROCLIMATISM AND THALASSOTHERAPY, Dubrovnik, Yugoslavia, May 8-16, 1954. Prof. C. Plavsic, Zeleni venac 1, Belgrade, Yugoslavia, Secretary General.

INTERNATIONAL CONGRESS OF INDUSTRIAL MEDICINE, Naples, Italy, Sept. 13-19, 1954. Professor Scipione Caccuri, Director, Institute of Industrial Medicine Policlinico, Naples, Italy, Chairman, Organizing Committee.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Stockholm, Sweden, Sept. 15-18, 1954. Professor Anders Kristenson, Karolinska Sjukhuset, Stockholm 60, Sweden, Secretary-General.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, São Paulo, Brazil, April 26-May 2, 1954. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Buenos Aires, Argentine, April 21-28, 1954. Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentine.

INTERNATIONAL CONGRESS OF NUTRITION, Amsterdam, Netherlands, Sept. 14-18, 1954. For information write: Dr. M. van Eekelen, Centraal Instituut voor Voedingsonderzoek T.N.O., 61 Catharynesingel, Utrecht, Netherlands.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, University of Montreal and McGill University, Montreal, Canada, Sept. 9-11, 1954, and Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 12-17, 1954. Dr. William L. Benedict, 100 First Avenue Building, Rochester, Minn., U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Berne, Switzerland, Aug. 30-Sept. 3, 1954. For information write: Professor M. Dubois, Isle-Hospital, Berne, Switzerland.

INTERNATIONAL CONGRESS OF PSYCHOLOGY, Montreal, Canada, June 7-12, 1954. For information write: Prof. H. S. Langfeld, International Union of Scientific Psychology, Eno Hall, Princeton University, Princeton, N. J., U. S. A.

INTERNATIONAL CONGRESS FOR PSYCHOTHERAPY, Zurich, Switzerland, July 21-24, 1954. Dr. H. K. Fierz, Theaterstrasse 12, Zurich 1, Switzerland, Secretary General.

INTERNATIONAL CONGRESS OF THE SOCIEDAD DE MÉDICOS INTERNOS, Residentes y Becarios del Instituto Nacional de Cardiologia de Mexico, Acapulco, Mexico, April 21-24, 1954. For information address: Dr. Jorge Soberón Acevedo, Avenida, Cuauhtemoc No. 300, Mexico, D. F., Mexico.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England, July 12-22, 1954. Prof. R. E. Tunbridge, General Infirmary, Department of Medicine, The University, Leeds, England, President.

INTERNATIONAL INSTITUTE ON CHILD PSYCHIATRY, Toronto, Canada, Aug. 13-14, 1954. Miss Helen Speyer, International Association for Child Psychiatry, 1790 Broadway, New York 19, N. Y., U. S. A., Executive Officer.

INTERNATIONAL POLIOMYELITIS CONGRESS, Rome, Italy, Sept. 6-10, 1954. Mr. Stanley E. Henwood, 120 Broadway, New York 5, N. Y., U. S. A., Executive Secretary.

INTERNATIONAL SOCIETY OF ANGIOLOGY, North American Chapter, Hotel Mark Hopkins, San Francisco, Calif., U. S. A., June 19, 1954. Dr. Henry Haimovici, 105 East 90th St., New York, N. Y., U. S. A., Secretary.

INTERNATIONAL SOCIETY OF BLOOD TRANSFUSION, Paris, France, Sept. 12-19, 1954. For information write: Colonel Julliard, Société Internationale de Transfusion Sanguine, 53 Boulevard Diderot, Paris 12e, France.

INTERNATIONAL SOCIETY FOR CELL BIOLOGY, Leiden, Netherlands, Sept. 2-9, 1954. Professor Peter J. Gaillard, University of Leiden, Leiden, Netherlands, Secretary.

INTERNATIONAL SOCIETY OF GEOGRAPHICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Professor Fred C. Roulet, Hebelstrasse 24, Basle, Switzerland, Secretary-General.

IRISH MEDICAL ASSOCIATION, Killarney, Ireland, July 7-10, 1954. Dr. P. J. Delaney, 10, Fitzwilliam Place, Dublin, Ireland, Medical Secretary.

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JOURNEES MEDICALES, Paris, France, April 21-25, 1954. For information write: Secretariat of the Journees, 12, rue Pierre-Geofroix, Colombes (Seine) France.

LATIN AMERICAN CONGRESS ON GYNECOLOGY AND OBSTETRICS, Sao Paulo, Brazil, July 10-15, 1954. Prof. Dr. Jairo Ramos, av. Brigadeiro Luiz Antonio, 278-8° andar, Sao Paulo, Brazil, Chairman of Organizing Committee of Medical Congresses.

LATIN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY, Caracas, Venezuela, Feb. 21-25, 1954. Dr. Victorino Marquez Reveron, Centro, Medico, Caracas, Venezuela, Secretary-General.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, Medellin, Columbia, South America, Feb. 15-20, 1954. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N. Y., U. S. A., Executive Director.

PAN AMERICAN CONGRESS OF CHILD WELFARE AND PEDIATRICS, Sao Paulo, Brazil, July 15-21, 1954. For information address: Dr. Jairo Ramos, Avenida Brigaderio Luiz Antonio 278-8° andar, Sao Paulo, Brazil.

PAN AMERICAN CONGRESS OF GASTROENTEROLOGY, Sao Paulo, Brazil, July 19-24, 1954. For information address: Dr. Jairo Ramos, Avenida Brigadeiro Luiz Antonio 278-8° andar, Sao Paulo, Brazil.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY (Interim), São Paulo, Brazil, June 17-21, 1954. Dr. Moacyr E. Alvaro, São Paulo, Brazil, President.

PAN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY AND BRONCHOESOPHAGOLOGY, Mexico, D.F., Mexico, Feb. 28-March 4, 1954. Dr. Maximo Garcia Castañeda, Humboldt 17, Mexico 1, D.F., Mexico, Secretary-General.

PAN AMERICAN CONGRESS OF VETERINARY MEDICINE, Sao Paulo, Brazil, April 3-10, 1954. Dr. Joao Soares Veiga, Rua Pires da Mota 159, Sao Paulo, Brazil, Chairman of Organizing Committee.

PAN-PACIFIC SURGICAL CONGRESS, Honolulu, Hawaii, Oct. 7-18, 1954. Dr. F. J. Pinkerton, Suite 7, Young Bldg., Honolulu 13, Hawaii, Director General.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS, London, England, May 17-19, 1954. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

SOUTH AMERICAN CONGRESS OF ANGIOLOGY, Sao Paulo, Brazil, July 1954. For information write: Dr. Rubens Carlos Mayall, Rua Senador Vergueiro 73, Rio de Janeiro, Brazil, S. A.

WORLD CONGRESS OF CARDIOLOGY, Washington, D. C., and Bethesda, Md., U. S. A., Sept. 12-17, 1954. Dr. L. W. Gorham, 44 East 23d St., New York 10, N. Y., U. S. A., Secretary-General.

WORLD CONGRESS OF INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, Scheveningen-The Hague, Netherlands, Sept. 13-17, 1954. Secretariat: Miss H. P. Post, Pieter Lastmarkade 37, Amsterdam Z, Netherlands.

WORLD FEDERATION OF OCCUPATIONAL THERAPISTS, Edinburgh, Scotland, August 17, 1954.

WORLD MEDICAL ASSOCIATION, Rome, Italy, Sept. 26-Oct. 2, 1954. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary-General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1954. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery.

ARKANSAS:* *Examination.* Little Rock, June 10-11. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, June 11-12. Sec., Dr. O. L. Atkinson, 2528 Central Ave., Hot Springs National Park.

CALIFORNIA: *Written.* Los Angeles, March 15-18; San Francisco, June 21-24; San Diego, Aug. 23-26; Sacramento, Oct. 18-21. *Oral.* Los Angeles, March 13; San Francisco, June 19; San Diego, Aug. 21; Los Angeles, Nov. 20. *Oral and Clinical Examination for Foreign Medical School Graduates.* Sec., Dr. Louis E. Jones, 1020 N Street, Sacramento.

COLORADO:* *Examination.* Denver, June 8-9. Final date for filing applications is May 8. *Reciprocity.* Denver, April 13. Final date for filing applications is March 13. Exec. Sec., Mrs. Beulah H. Hudgens, 831 Republic Bldg., Denver 2.

CONNECTICUT:* *Examination.* Hartford, March 9-10. Secretary to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, March 9-10. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DISTRICT OF COLUMBIA:* *Examination.* Washington, May 10-11. Deputy Director, Mr. Paul Foley, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington, D. C.

FLORIDA:* *Examination.* Jacksonville, June 27-29. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami.

GEORGIA: *Examination and Reciprocity.* Atlanta and Augusta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Director of Medical Services, Guam Memorial Hospital, Agana.

ILLINOIS: *Examination and Reciprocity.* Chicago, April 6-8; June 22-24, and Oct. 5-7. Supt. of Registration, Mr. Fredric B. Selcke, Capitol Bldg., Springfield.

INDIANA: *Examination.* Indianapolis, June 16-18. Exec. Sec., Miss Ruth V. Kirk, 538 K of P Bldg., Indianapolis.

IOWA:* *Examination.* Iowa City, June 14-16. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: *Examination and Reciprocity.* Kansas City, June 9-10. Sec., Dr. O. W. Davidson, 872 New Brotherhood Bldg., Kansas City.

MAINE: *Examination and Reciprocity.* Portland, March 9-10. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Examination.* Baltimore, June 15-18. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore 1.

MICHIGAN:* *Examination.* Detroit and Ann Arbor, June 1954. Sec., Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing 8.

MISSISSIPPI: *Examination and Reciprocity.* Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Old Capitol, Jackson 113.

MISSOURI: *Examination.* Jefferson City, Feb. 18-19. *Reciprocity.* Jefferson City, Feb. 8. Exec. Sec., Mr. John A. Hailey, P. O. Box 4, Jefferson City.

MONTANA: *Reciprocity.* Helena, April 5. *Examination.* Helena, April 6-7. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEBRASKA:* *Examination.* Omaha, June 1954. Director, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, March 10. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination,* Trenton, June 15-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, April 12-13. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, Syracuse and New York City, Feb. 16-19. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

OHIO: *Examination.* Columbus, June 14-16. *Reciprocity.* Columbus, April 13. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* *Examination.* Oklahoma City, June 9-10. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

SOUTH DAKOTA:* Reciprocity can be obtained at any time between meetings of board. Executive Secretary, Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TENNESSEE:* *Examination.* Memphis, March 24-25. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

TEXAS: *Examination and Reciprocity.* Fort Worth, June 21-23. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Ft. Worth 2.

UTAH: *Reciprocity.* Salt Lake City, Feb. 16. Asst. Director, Mr. Frank E. Lees, 314 State Capitol Bldg., Salt Lake City 1.

VERMONT: *Examination.* Burlington, Jan. 28-30. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: *Examination and Reciprocity.* Richmond, June 16. Address: Virginia Board of Medical Examiners, 631 First St., S.W., Roanoke.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARIZONA: *Examination.* Tucson, March 16. Sec., Mr. Herbert D. Rhodes, University of Arizona, Tucson.

COLORADO: *Examination.* Denver, March 3-4. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

CONNECTICUT: *Examination.* New Haven, Feb. 13. Address: State Board of Healing Arts, 52 Whitney Ave., New Haven 10.

FLORIDA: *Examination.* Gainesville, June. Sec., Mr. M. W. Emmel, University of Florida, Box 340, Gainesville.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Feb. 12-13. Sec., Mrs. Anne Baker, 410 W. Allegan St., Lansing 15.

NEBRASKA: *Examination.* Omaha, May 4-5. Director, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln 9.

OKLAHOMA: *Examination.* Oklahoma City, April 16-17. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, March 6, June 5, Sept. 11 and Dec. 4. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

RHODE ISLAND: *Examination.* Providence, Feb. 10. Administrator, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: *Examination.* Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TENNESSEE: *Examination.* Memphis, March 17-18. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

TEXAS: *Examination.* April 1954. Location determined by number of applicants from different sections of the state. Sec., Brother Raphael Wilson, C.S.C., 407 Perry-Brooke Bldg., Austin.

WISCONSIN: *Examination.* Madison, April 3 and June 5. Final date for filing application is March 26 and May 28. Sec., Dr. W. H. Barber, 621 Ransom St., Ripon.

*Basic Science Certificate required.

DEATHS

Kirby, Daniel Bartholomew ✦ New York City; born in Cleveland, April 12, 1891; Western Reserve University School of Medicine, Cleveland, 1916; professor emeritus of ophthalmology at New York University College of Medicine; specialist certified by the American Board of Ophthalmology, of which he was formerly chairman, and the American Board of Plastic Surgery; served during World War I; member of the American Academy of Ophthalmology and Otolaryngology, Harvey Society, American Ophthalmological Society, and the Association for Research in Ophthalmology; member of the ophthalmologic societies of Brazil, Argentina, Chile, Peru, Cuba, France, and Greece; fellow of the American College of Surgeons; served on the staffs of the New Rochelle (N. Y.) Hospital, St. Joseph's Hospital in Yonkers, Manhattan Eye and Ear Hospital, New York Eye and Ear Infirmary, and St. Clare's Hospital; formerly surgeon in chief, department of ophthalmology, Bellevue Hospital; author of "Surgery of Cataract" and others; died in Pelham Dec. 27, aged 62, of coronary disease.

Vander Veer, Edgar Albert ✦ Albany, N. Y.; born in Albany, Sept. 29, 1873; Albany (N. Y.) Medical College, 1898; an Associate Fellow of the American Medical Association and member of its House of Delegates from 1911 through 1914 and in 1916; member of the founders group of the American Board of Surgery; member of the Industrial Medical Association and the American Surgical Association; fellow and one of the founders of the American College of Surgeons; past president of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons and the New York State Society of Industrial Medicine; professor emeritus of surgery at his alma mater; on the courtesy staff, Albany Hospital; consulting surgeon, Anthony N. Brady Maternity Home, St. Peter's and Memorial hospitals in Albany, Benedictine Hospital in Kingston, and Memorial Hospital of Greene County, Catskill; died recently, aged 80, of pulmonary infarction and fracture of the left hip.

Altman, Morris Robert ✦ New York City; Baltimore University School of Medicine, 1899; died recently, aged 76, of heart disease.

Bacher, Frank M., Oceanside, N. Y.; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Germany, 1915; died in West Brentwood recently, aged 63, of acute cardiac dilatation.

Biscow, Harry Benjamin, New York City; University and Bellevue Hospital Medical College, New York, 1905; served as president of the Bronx Gynecological Society; affiliated with Sydenham Hospital and the Mount Sinai Hospital, where he died Oct. 27, aged 75, of leukemia.

Bundrant, William Clayborne, Klamath Falls, Ore.; University of Tennessee Medical Department, Nashville, 1910; died in the Hillside Hospital Oct. 10, aged 75, of myocarditis.

Campbell, Harry Lincoln ✦ Medford, Mass.; Boston University School of Medicine, 1938; certified by the National Board of Medical Examiners; physician for the public schools; president of the Medford Medical Society; past president of the staff of Lawrence Memorial Hospital; died Oct. 14, aged 48, of carcinoma of the sigmoid with metastases to the vertebrae.

Fareed, Mirza Ameen Ullah ✦ Santa Monica, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; served on the staff of the Hollywood Hospital in Los Angeles; died Dec. 3, aged 71.

Frankenthal, Maurice Albert ✦ St. Louis; Johns Hopkins University School of Medicine, Baltimore, 1902; an Associate Fellow of the American Medical Association; died in Barnes Hospital Dec. 5, aged 76, of carcinoma of the colon.

✦ Indicates Member of the American Medical Association.

Freeman, Will Loren, St. Charles, Mo.; Denver College of Medicine, 1893; served during World War I; formerly county coroner; died in St. Joseph Hospital Dec. 22, aged 84, of cerebral hemorrhage.

Gould, Dorsey Thomas, Waverly, Tenn.; University of Nashville Medical Department, 1902; served on the staff of the General Hospital in Nashville; died in St. Thomas Hospital, Nashville, Nov. 11, aged 82, of chronic myocarditis.

Hirsch, Abraham Albert, Kingsburg, Calif.; Bennett Medical College, Chicago, 1914; served as a civilian contract surgeon at U. S. Army Hospital, Camp Stoneman, Calif.; died in Spokane, Wash., Dec. 6, aged 61, of a heart attack.

Hodges, Thomas Luther ✦ Bismarck, Ark.; Barnes Medical College, St. Louis, 1898 and 1899; died in Clark County Memorial Hospital in Arkadelphia, Dec. 3, aged 85, of coronary thrombosis.

Hosch, Jacob Frederick ✦ Albany, Ore.; University of Oregon Medical School, Portland, 1905; formerly state legislator; served as mayor in Redmond and Bend; on the staffs of the Santiam Memorial Hospital in Stayton, and Albany General Hospital; died Dec. 5, aged 73, of carcinoma of the rectum and colon with metastasis to the lungs.

Keeler, Claude Charles, Albuquerque, N. M.; Central Medical College of St. Joseph, Mo., 1903; served during World War II; fellow of the American College of Surgeons; member of the American Trudeau Society; for many years affiliated with the Veterans Administration; formerly on the staff of the Veterans Administration Hospital in Fort Bayard; died in Laguna Beach, Calif., Oct. 18, aged 73, of coronary thrombosis.

Soriano, Fortunato, South Orange, N. J.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Naples, Italy, 1903; died in the Newark City Hospital Dec. 5, aged 72, of hypertensive cardiovascular disease.

Swarthout, Ellis Frank, Jensen Beach, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; died Oct. 9, aged 75, of arteriosclerotic heart disease.

Taylor, Earle Ernest, Crichton, Ala.; University of Tennessee Medical Department, Nashville, 1904; died Oct. 8, aged 74, of coronary occlusion.

Taylor, Reu Spencer ✦ Detroit; Detroit College of Medicine, 1906; on the staff of the Booth Hospital; died in the Providence Hospital Nov. 23, aged 77, of coronary occlusion.

Tutschulte, Ernest ✦ Monroe, N. Y.; Cornell University Medical College, New York, 1899; Associate Fellow of the American Medical Association; died recently in Cornwall, aged 76, of coronary thrombosis and arteriosclerosis.

Watson, Clyde Emil, Morgantown, W. Va.; Johns Hopkins University School of Medicine, Baltimore, 1910; died Dec. 2, aged 74, of coronary heart disease.

Whitney, George W. ✦ Auburn, N. Y.; Bellevue Hospital Medical College, New York, 1886; served on the staff of the Auburn City Hospital; died recently, aged 89, of cerebral hemorrhage and generalized arteriosclerosis.

Wiener, Solomon ✦ New York City; Columbia University College of Physicians and Surgeons, New York, 1904; fellow of the American College of Surgeons; died Nov. 1, aged 71, of myocarditis.

Woldenberg, Samuel Charles ✦ Washington, D. C.; Chicago Medical School, 1918; served during World War II; died Dec. 17, aged 59, of carcinomatosis

Ziegler, Frederic Jay ✦ Portland, Ore.; Jefferson Medical College of Philadelphia, 1905; for many years city physician; affiliated with Good Samaritan Hospital and the Providence Hospital, where he died Nov. 22, aged 75, of cancer.

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GOVERNMENT SERVICES

NAVY

Reserve Officers Eligible for Active Duty for Training Courses.—Two active duty for training courses for Naval Reserve Medical Department officers have been scheduled for March, 1954. The courses will be of two weeks' duration each and will convene as follows:

Medicomilitary Training.—The third course in medicomilitary matters to convene at the Naval Medical School, National Naval Medical Center, Bethesda, Md., will be conducted March 8-20. The first week of the instruction period will be devoted to orientation in all phases of the medical reserve program of the Navy. Recent advances in military medicine and surgery, including aviation, submarine, and field medicine, will be presented. During the second week, there will be discussions of problems most likely to be encountered, and the recommended defensive techniques to be employed, by medical and dental officers against bacterial, chemical, and radiological activity. Reserve Medical, Dental, Medical Service, Nurse, and Hospital Corps officers residing in the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th naval districts, and in the Potomac River naval command are eligible for this two weeks' active duty training. Interested officers should submit their request for 14 days' active training duty to the commandants of their naval districts. Naval districts listed above have been assigned quotas for this course.

Field Medicine.—Male Naval Reserve Medical Department officers residing in the 11th, 12th and 13th naval districts are eligible to attend a course in field medicine at the Marine Corps Base, Camp Pendleton, Calif., March 15. The course is designed to provide specialized training in field medicine for inactive Naval Reserve Medical, Dental, Medical Service, and Hospital Corps officers. Practical instruction in medical materiel logistics, preventive medicine in the field, treatment of battle casualties, and medical components of Fleet Marine Force units are included. The trainee will receive also practical instruction, including the use of small arms and items of individual field equipment, methods of protecting patients and medical personnel in assault, and march and bivouac routines. Eligible personnel interested in this course should submit their requests to the commandants of their respective naval districts. Bachelor officers quarters will be available for those attending the course in field medicine, and working uniform is required. Participation in these courses will not increase the Naval Reservist's vulnerability for orders to extended active duty.

PUBLIC HEALTH SERVICE

Venereal Disease Symposium—The sixth annual Symposium on Recent Advances in the Study of Venereal Diseases will be held in the auditorium of the Department of Health, Education, and Welfare, Washington, D. C., April 29-30. The sessions are open to all interested physicians and workers in allied professions. These symposiums usually draw hundreds of persons from all parts of the country and are the occasion for exchange of the latest information by some of the most outstanding authorities. The topics to be discussed at this symposium will include basic and clinical research, serology, epidemiology, treatment, program operation, and professional education.

VETERANS ADMINISTRATION

Neuropsychiatric Meeting at North Little Rock.—The sixth annual neuropsychiatric meeting will be held at the Veterans Administration Hospital, North Little Rock, Ark., on Feb. 25-26. Among the guest lecturers will be Drs. Kenneth E. Appel, president, American Psychiatric Association, Philadelphia; Franz Alexander, director, Chicago Institute for Psychoanalysis; Francis J. Braceland, psychiatrist in chief, Institute of Living, Hartford, Conn.; Dr. Richard L. Jenkins, chief, research section, psychiatry and neurology service, Department of Medicine and Surgery, Veterans Administration, Washington, D. C.; William Malamud, chairman, department of psychiatry and neurology, Boston University School of Medicine; Jules H. Masserman, Chicago; Henry G. Schwartz, professor of neurological surgery, Washington University, St. Louis; Harvey J. Tompkins, director, psychiatry and neurology service, Department of Medicine and Surgery, Veterans Administration, Washington, D. C.; Gregory Zilboorg, New York, and Alfred C. Kinsey, director, Institute of Sex Research, Bloomington, Indiana. There will be a large number of technical exhibits. Dr. Appel will be the principal speaker at the dinner Feb. 25. There will be no charge for registration, and all interested professional personnel will be welcome. Information may be obtained from Dr. Ewin S. Chappell, Veterans Administration Hospital, North Little Rock, Ark.

MISCELLANEOUS

Positions Open in Food and Drug Administration.—The Food and Drug Administration of the U. S. Department of Health, Education, and Welfare is actively recruiting medical officers to work in Washington, D. C. The positions pay an entrance salary of $7,040 to $9,600 with increments. The duties of the positions provide for medical decisions relating to food, drugs, devices, and cosmetics, as well as participation in the medical phases of legal actions against violative products. For further information write to Dr. Irvin Kerlan, Acting Medical Director, Food and Drug Administration, Washington 25, D. C. Interested physicians should also file for Medical Officer Examination, Examining Circular EC-24, issued April 5, 1950, with the U. S. Civil Service Commission, Washington 25, D. C., stating special preference for a position with the Food and Drug Administration.

Twenty-five Billion-Volt Accelerator to Be Built at Brookhaven.—The U. S. Atomic Energy Commission has approved the construction at Brookhaven National Laboratory of an ultra-high-energy particle accelerator for nuclear research. The new machine, an alternating gradient synchrotron, will be designed to produce beams of protons of energies ranging up to 25 billion electron volts. The cost of design and construction of the new accelerator is estimated at 20 million dollars. Design work will start in the near future, and the machine is expected to be completed in five to six years. Once in operation, it will be available to scientists wishing to collaborate in Brookhaven research programs or to carry out independent programs. Particle accelerators have played an important role in the advancement of nuclear science. The energy of the particle beams produced by accelerators bears a direct relationship to the nuclear phenomena that can be studied. As higher energy levels have been attained in laboratory machines, new subnuclear particles have been discovered and new nuclear phenomena observed. The most powerful accelerator now in operation is the Brookhaven Cosmotron, which has accelerated protons to energies of 2.3 billion electron volts. The Bevatron, under construction at the University of California Radiation Laboratory at Berkeley, is expected to accelerate particles into the 5 to 7 billion electron volt range. By providing particles with energies as high as 25 billion electron volts, the Brookhaven alternating gradient synchrotron is expected to contribute important new knowledge of the fundamental nature of matter. Brookhaven National Laboratory, a research center equipped with facilities that no single university could afford, is operated for the AEC by Associated Universities, Inc., a corporation formed by nine northeastern universities: Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Princeton, University of Pennsylvania, University of Rochester, and Yale.

FOREIGN LETTERS

ITALY

Bronchial Adenoma.—At a meeting of the medicosurgical society of the Romagna region, April 20, 1953, Professor D'Arcangelo and his co-workers reported on two patients with bronchial adenoma, both of whom recovered completely. In recent years many contributions have been added to the medical literature on this disease, which in the past was often confused with bronchial carcinoma or inflammatory pulmonary disease. Bronchial adenoma is a neoplasm that originates from the mucous glands of the main bronchi. Although histologically it simulates one type of bronchial carcinoma, it is never complicated by regional and general metastases. Although it may be considered benign from the histological point of view, it should be considered malignant from the clinical point of view. It causes bronchial stenosis, obstructive emphysema, atelectasis, purulent bronchiectasis, pleural reactions, and eventually death from pneumonitis.

The prognosis of bronchial adenoma has greatly improved in recent years, and most patients can be cured by surgical removal of the neoplasm. These good results were made possible by the wider use of bronchoscopy, which is the main means of diagnosis, and by progress in thoracic surgery after the introduction of curare and intratracheal intubation anesthesia. The first of the two patients treated by Professor D'Arcangelo and his co-workers was a young woman who from 1947 to 1951 had recurring episodes of inflammation in the lower lobe of her right lung that consisted mainly of bronchiectatic cavities. In the last year the patient was continuously ill, had a temperature of 100.4 F to 102.2 F, and raised 400 to 600 cc. of mucopurulent sputum every day. Bronchoscopy revealed a nodule, the size of a cherry, which was obstructing the bronchus to the lower lobe and which histologically was found to have all the characteristics of an adenoma. The lower lobe of the right lung was removed and the patient made an uneventful recovery.

The second patient was a 40-year-old man who during the first months of 1950 had episodes of subacute inflammation in the right lung and pleura that became more accentuated until they culminated in atelectasis of the middle lobe. A bronchial carcinoma was suspected, and bronchoscopy was performed. It revealed a swelling, the size of a cherry, in the right lower bronchus at its bifurcation with the middle bronchus. This swelling almost entirely occluded the bronchial lumen. Intrabronchial diathermy was given, the neoplasm was entirely destroyed, and the patient's symptoms disappeared completely. Bronchoscopic reexaminations have failed to reveal any evidence of recurrence.

The speakers concluded that bronchial adenoma should be suspected in patients with chronic respiratory inflammation and signs of atelectasis or obstructive emphysema. It is wise in such cases to perform a bronchoscopy.

Research on Ballistocardiograms.—Drs. Sibilla and Foianini reported the results of their studies on the basal factor in the genesis of the ballistocardiogram before the Society of Cardiology in Rome on April 29, 1953. They produced stenosis or occlusion of the large vessels at various points in dogs and then registered the effects of these on the ballistocardiogram. They found that, as a rule, occlusion of the superior vena cava obliterated the diastolic waves and that stenosis or occlusion of the pulmonary artery caused accentuation of the diastolic waves. Conditions that diminish the cardiac output, such as aortic and pulmonary stenosis, are accompanied by a decrease in the amplitude of the systolic waves. Pulmonary stenosis is accompanied by an ample K wave. Aortic stenosis is accompanied by a diminution of the amplitude or disappearance of the I wave. Stenosis of the aorta at various points, from the isthmus to above the aortic bifurcation, is accompanied by notching of the J peak or the JK segment and by disappearance of the K wave. Stenosis or occlusion of the aorta at the bifurcation does not cause the K wave to disappear, probably because of an increased aortic deceleration, as is observed in arterial hypertension.

These experimental findings do not necessarily apply to human beings. In fact, when aortic or pulmonary stenosis is present in human beings, hypertrophy, collateral circulation, and systems of adaptation that are not found in animals are also present. In abrupt occlusions, however, ballistocardiographic effects may be produced in men that are similar to those produced in animals. There are also suggestive analogies in stenosis of the aortic isthmus.

The items in these letters are contributed by regular correspondents in the various foreign countries.

LONDON

Medicolegal Aspects of Spinal Anesthesia.—An interesting medicolegal case has just been decided in the courts. On the same day in 1947 two patients, aged 51 and 62, respectively, were given a spinal anesthetic (dibucaine [Nupercaine]) for a minor operation by the same anesthetist in the same hospital. In both permanent paraplegia developed, and they sued the Minister of Health, the anesthetist, and the manufacturers of the anesthetic for damages. At an early stage of the trial the manufacturers were dismissed from the action as having no liability. The contention of the plaintiffs was that the paraplegia was due to phenol that had percolated through the ampuls into the dibucaine. The ampuls had been stored in a 1:40 phenol solution colored with Bordeaux B, after temporary immersion in a 1:20 solution. The judge accepted the expert evidence that phenol can find its way into an ampul stored in a solution through "invisible cracks" or "molecular flaws" in the glass. This was a possibility to which Prof. R. R. Macintosh had drawn attention in 1951, but the risk was not realized in 1947 when the plaintiffs received their spinal anesthesia. The judge ruled out the possibility of the anesthetist having failed to notice a visible crack in the ampuls before using them. There was a clash of expert evidence at the trial, which lasted 11 days. Both Sir Francis Walsh, consulting physician to University College Hospital, and Dr. Macdonald Critchley, senior neurologist at King's College Hospital, expressed the opinion that the paraplegia could not be due to phenol and considered it to be due to the spinal anesthetic. Prof. R. R. Macintosh of Oxford, on the other hand, was of the opinion that the paraplegia was due to phenol. As the *Pharmaceutical Journal* points out, this case raises the question of how such ampuls should be stored. In his evidence at the trial, Professor Macintosh said the best method of sterilizing ampuls was by autoclaving.

British Orthopaedic Association.—At the annual meeting of the British Orthopaedic Association in Birmingham in October, in a discussion on replacement arthroplasty in elderly patients with fracture of the neck of the femur, O. J. Vaughan-Jackson reported that 32 of 34 patients in his series tolerated the operation well and one died. Fracture of the prosthesis occurred in four patients. He considered that use of metal in place of plastic would probably solve the problem. G. N. Golden, C. C. M. Murray, and A. H. Ord reported good results in 70% and satisfactory results in 15%. K. H. Pridie, on the other hand, considered that Judet arthroplasty should be reserved for patients in whom nailing had failed. In those treated by nailing, the results were satisfactory in 57%. Avascular necrosis was inevitable in 11%, but this was balanced by a 12% incidence of fractured acrylic prosthesis.

Strongly opposing views were expressed in a discussion of the causes of coccydynia. H. J. Richards, on the basis of an analysis of 102 cases, contended that in many cases coccydynia was caused by a central prolapse of one of the lower lumbar intervertebral disks. Almost half his patients had low back pain or sciatica initially; in almost all the rest these symptoms

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developed later. K. I. Nissen denied this hypothesis. In his experience, repeated manipulation of the coccyx usually relieved the condition, though in 5 to 10% excision might be necessary.

A discussion on isoniazid in skeletal tuberculosis also revealed a difference of opinion. On the basis of his experience in 20 cases, mainly of tuberculosis of the spine, hip, and knee, treated for six months, A. G. Quinlan concluded that isoniazid caused a marked improvement in the patient's general condition but no dramatic effect on the tuberculous lesion. M. C. Wilkinson had seen little improvement in the synovial membrane after two months of treatment with isoniazid, and he preferred to combine antibiotic therapy with excision of the synovial membrane. A more optimistic outlook was that of M. B. Devas, who had treated 10 patients with a combination of streptomycin, *p*-aminosalicylic acid, and isoniazid for six months. In all of them the lesion was quiescent a year later.

Chemotherapy of Tuberculosis.—A report of the tuberculosis chemotherapy trials committee of the Medical Research Council (*Brit. Med. J.* **2**:1005, 1953) compares the effects of streptomycin plus isoniazid and of *p*-aminosalicylic acid plus isoniazid in 391 patients with pulmonary tuberculosis after three months' treatment. The criteria for acceptance in the trial were: (1) tubercle bacilli present in smears of sputum taken within two weeks, or on culture derived from a specimen taken not more than two months previously; (2) tubercle bacilli resistant to neither streptomycin nor *p*-aminosalicylic acid; (3) no previous treatment with streptomycin, *p*-aminosalicylic acid, or isoniazid during the preceding three months; and (4) no concomitant pulmonary collapse therapy or pneumoperitoneum. The selected patients included those with acute rapidly progressive pulmonary tuberculosis believed to be of recent origin; those with other forms of pulmonary tuberculosis considered suitable for chemotherapy; and those with chronic forms of pulmonary tuberculosis expected to make only a limited response to streptomycin plus *p*-aminosalicylic acid.

The dosage schedules used were: (1) 1 gm. of streptomycin daily in one intramuscular injection, plus 200 mg. of isoniazid daily in two equal oral doses; (2) 1 gm. of streptomycin in one intramuscular injection, twice weekly, plus 200 mg. of isoniazid daily in two equal oral doses; (3) 20 gm. of *p*-aminosalicylic acid (sodium salt) in four equal oral doses, plus 200 mg. of isoniazid daily in two equal oral doses; and (4) 10 gm. of *p*-aminosalicylic acid (sodium salt) plus 200 mg. of isoniazid daily in two equal oral doses.

There were two deaths (0.5%) during the period of treatment: one in the first treatment group from renal failure secondary to acute nephritis and one in the third group after three weeks of treatment. There were no toxic reactions to isoniazid, but treatment had to be stopped in five patients in the third group because of toxic reactions to *p*-aminosalicylic acid. At the end of three months the general condition had improved in 89% of the patients in group 1 and 88% of those in the group 3. The average gain in weight was 5.8 kg. for group 1 and 4.9 kg. for group 3. The temperature fell to normal in 79% of the febrile patients in group 1 and 85% of the febrile patients in group 3. In patients with a pretreatment sedimentation rate of 21 or more, the rate fell to 10 or less in 37% of those in group 1 compared with 46% of those in group 3. Grade 2+ or 3+ radiographic improvement was seen in 54% of group 1 and 42% of group 3. The proportion of patients bacteriologically negative, both on direct examination and on culture, at a single examination, was 65% for group 1 and 66% for group 3. Sensitivity tests showed that tubercle bacilli from groups 3 and 4 showed practically no development of resistance to isoniazid or *p*-aminosalicylic acid. In tubercle bacilli from group 1 development of streptomycin resistance was largely prevented, but the incidence of isoniazid resistance was noticeably greater in organisms from group 2 (from 8 to 21 patients) than in those from group 1 (from 2 to 18 patients).

The committee concluded that 20 gm. of *p*-aminosalicylic acid plus 200 mg. of isoniazid daily, used for three months, is very effective in pulmonary tuberculosis. It ranks with the most efficacious chemotherapeutic combination so far tested, namely, 1 gm. of streptomycin plus 20 gm. of *p*-aminosalicylic acid daily. Both drugs are administered orally.

LUXEMBOURG

International Congress of Legal and Occupational Medicine.—The 25th International Congress of Legal, Social, and Occupational Medicine of the French Language was held in Luxembourg in May, 1953, under the chairmanship of Dr. Molitor, Director of Public Health of Luxembourg. Muller discussed neuropathological disturbances following emotional shock and stated that the expert witness must show (1) the reality and importance of the emotional trauma, (2) proof of an emotional shock, (3) evidence of predisposition in the previous emotional status of the patient, (4) the reality of the alleged disturbances, and (5) the details of the manifestations of these disturbances. Other reports dealt with the effects of pain on the ion equilibrium of the blood, differentiation of fetal and adult blood stains, detection of semen stains by acid phosphatase, radiological differentiation of human and animal long bones, and determination of arsenic in the hair and its value in the diagnosis of arsenical poisoning. Mosinger, in a paper on occupational cancer, proposed the following preventive measures: (1) prohibition of industrial use of all carcinogenic products that act by contact, inhalation, or ingestion; (2) reduction to a minimum of all contact with carcinogenic products; and (3) promotion of research on the carcinogenic action of products used in industry and dissemination of the results.

NORWAY

The Changing Clientele of a Skin Hospital.—In November, 1953, the opening of the rebuilt and modernized skin department of the Rikshospital in Oslo was the occasion for a historical survey of this institution by its chief, Dr. Niels Danbolt, professor of dermatology at the University of Oslo. When the forerunner of the hospital was opened in 1817, one of its objects was the teaching of skin and venereal diseases for medical students. The 8 primitive buildings, which lacked even proper foundations, were supposed to house about 25 patients, but the demands for admission were so great that up to 102 had to be housed at the same time. In spite of the miserable conditions under which these patients lived, some of them survived to "enjoy" the hospitality of this institution for up to 10 years. In 1844, again in 1854, and again in 1883 the hospital changed its site, and after the last change it had 72 beds. In 1889 the hospital was put in charge of Prof. Caesar Boeck whose name is immortalized in connection with sarcoid disease, hitherto taken or mistaken for tuberculosis. In Boeck's time also, the patients suffered, for the most part from venereal disease, and Boeck's careful study between 1890 and 1910 of about 2,000 patients with syphilis came to enjoy an international reputation because of its masterly analysis of the morbidity and mortality of this disease. As late as 1900 about two-thirds of the patients suffered from venereal disease, and only 10 or 15 years ago these patients still made up about one-third of the total.

Since Professor Danbolt became chief, the tendency for venereal disease to disappear from the skin hospital's clientele has continued, and, as he has recently pointed out, "The need for hospital beds for venereal cases is thus now exceedingly modest." The new building just opened provides inpatient accommodation for 87 patients and improved facilities for outpatient activities. Laboratories are provided for the study of the disturbances of the peripheral circulation, of importance to the treatment of varicose ulcers and allied conditions. Other laboratories are now available for the study of the allergic diseases, including eczema and fungoid diseases. A lecture hall is also provided for the benefit of students and nurses. The dwindling number of inpatients suffering from venereal disease reflects not only their growing rarity but also their amenability to outpatient treatment, thanks to recent advances in chemotherapy. On the other hand, growing demands are being made on the hospital's accommodation for the treatment of eczema which is constantly growing in importance as an industrial disease.

CORRESPONDENCE

ALTERNATING PRESSURE PAD

To the Editor:—Further experience with the alternating pressure pad since our initial report (*J. A. M. A.* **138:**583 [Oct. 23] 1948) has convinced the professional and nursing staffs of various hospitals of its value in the prevention and treatment of decubitus ulcers (bedsores). For the past five years at the Cleveland Clinic Hospital, the pad has been used routinely for all patients admitted with decubitus ulcers as well as for those who are considered candidates for them. The latter group includes paralyzed, comatose, and severely debilitated patients. It is used also for those who find turning painful and for certain others who are immobilized by continuous traction or casts. It has proved a real aid in the proper nursing of these patients. In analyzing our experiences we have found that approximately 1 of every 25 patients admitted has been treated on the alternating pressure pad.

The pad is, in effect, a pneumatic massaging mattress that is placed on top of the ordinary bed mattress, as explained previously (*Mod. Hosp.* **71:**72 [Nov.] 1948). It is made by Air-Mass, Inc., 12720 Lake Shore Blvd., Cleveland, of a plastic, waterproof material with parallel rows of air cells running across its width. Alternate series of these air cells are filled and emptied approximately every three minutes by means of a small electric pump that operates quietly 24 hours a day. The pressure in the inflated series of air cells is sufficient to support the patient's weight while the alternate series of cells is deflated. Viewed from beneath, the patient's skin can be seen to blanch and flush alternately as the air cells inflate and deflate every three minutes. The changes in pressure are gradual so that the patient is unaware of movement. The pad is placed on the bed mattress, and, in order not to lessen its effect, it is covered by only a single bed sheet.

Bedsores are gangrene of the skin caused by interference with circulation from pressure of the mattress on bony prominences. In their prevention and treatment, there is no substitute for good nursing care. The nurse's responsibility is to take time to (1) turn the patient frequently, (2) massage the threatened areas, (3) keep the bed dry, and (4) cleanse the ulcers. The use of the alternating pressure pad for patients predisposed to decubitus ulcers has made it possible to keep the skin healthy with the expenditure of half as much nursing time as was previously necessary. The pad has made possible more rapid healing of decubitus ulcers in patients admitted with them.

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MISUSE OF WORDS IN SCIENTIFIC LITERATURE

To the Editor:—In scientific writing one enjoys the availability of words that express meaning and shades of meaning more exactly than in any other class of authorship. On the other hand, the very existence of such refinement of vocabulary carries a responsibility for the author to choose his words carefully in order that his exact intent of meaning is conveyed to the reader. Recent medical literature provides several examples of the misuse of the words toxicity, side-action, and idiosyncrasy. Such a misuse is unfortunate, particularly in the reporting of actions of new drugs, since an improper connotation is invariably conveyed when the wrong word is used. None of these words is synonymous with the others, and the use of toxicity and side-action is particularly confused in recent writing.

Toxicity is intended to express the quality of being toxic; toxic, in turn, is synonymous with poisonous. A poison is a substance that either destroys life or seriously impairs the function of one or more of the organs of the body. A side-action is not a toxic action nor is it evidence of idiosyncrasy. Most, if not all, drugs have more than one action, and side-actions of a drug are standard physiological or pharmacological activities on organs or tissues that are not primarily concerned in therapy. They may be illustrated by the activity of morphine in causing smooth muscle spasm when the drug is administered for relief of pain or by atropine in causing xerostomia when it is given to relieve smooth muscle spasm. Idiosyncrasy means an activity of a drug in a particular patient that is not seen in the vast majority of patients. It is defined as a peculiarity of constitution in that particular patient; a peculiarity that makes him react to the drug differently from most patients. Idiosyncrasies obviously occur relatively infrequently and may be illustrated again by morphine and the excitation resulting in a small percentage of patients after its administration. The correct use of these terms will avoid possible misinterpretation of an author's intent of meaning and enable the reader to obtain an accurate understanding of the writer's thought.

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CORRECTIVE SURGICAL PLANING OF THE SKIN

To the Editor:—The paper by Kurtin (Corrective Surgical Planing of Skin, *A. M. A. Arch. Dermat. & Syph.* **58:**389-397 [Oct.] 1953) elicits some comments. Credit should be given to Dr. Kurtin for having reintroduced a method that has certain usefulness, but that has been known for over 30 years. It was Kromayer ("Die Behandlung der kosmetischen Hautleiden unter besonderer Berücksichtigung der physikalischen Heilmethoden und der narbenlosen Operationsweisen," Leipzig, Georg Thieme, 1929, p. 15) who described this method that consists of freezing the skin with ethyl chloride and the subsequent use of various sizes of dental burrs mounted on a motor-driven flexible cord. This method is known to most Europeans (Volk, R., und Winter, F.: "Lexikon der kosmetischen Proxix," Berlin, Springer-Verlag, 1936, p. 545) and to a good many American dermatologists. Its usefulness was proved in the treatment of keloids, pigmented nevi, freckles, lentigines, tattoos, Berlocque dermatitis, and superficial pitted scars, Kromayer also recommended this method in the treatment of the hyperpigmented borders of vitiligo.

I have had extensive experience with this method, and I am convinced that the use of dental burrs has a definite advantage over the brush or sandpaper method. While planing can be achieved with wire brushes and sandpaper, the small size of the burrs is more advantageous and permits greater precision in the treatment of tiny areas. Furthermore, it is far easier to control the depth of abrasion with the firm burrs than with the brushes or sandpaper.

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ALLERGIC DISEASE IN THE NEWBORN

To the Editor:—In the Oct. 17, 1953, issue of The Journal there appeared an article called "Prophylaxis of Allergic Disease in the Newborn." It was inferred that allergic conditions could be minimized if various foods were restricted from the mother's diet during pregnancy. It was also advocated that the newborn be given Mull-Soy, a soybean milk formula, instead of milk. Both of these suggestions need confirmation, for during the past 15 years I have observed 59 pairs of monozygous twins, and, of these, 52 sets had only one twin presenting an allergy. The study of twins gives a controlled study rarely duplicated naturally or clinically, so if only 50% present an allergy, how can any deduction be made statistically as has been offered in the article mentioned? Constructively, I believe that if mothers could be more successful in feeding breast milk and physicians less eager to give foods that infants are not ready to digest, perhaps allergy would be minimized.

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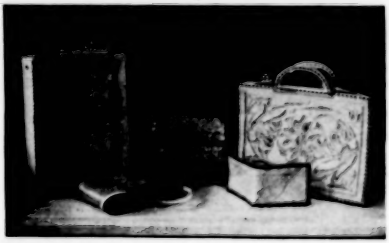
THE LEISURE CORNER

TOOLING LEATHER AS A HOBBY

The desire to create and the capacity to admire beautiful objects is strongly ingrained in most of us. To enjoy fully the exciting experience of creation in the field of tooling leather, i. e., the impression and shaping of leather, the craftsman-hobbyist obviously requires knowledge of the medium in which he has chosen to work. Interest in tooling leather—or, for that matter, in any form of handicraft—is enhanced by the type of decoration adorning the object of one's artistic expression. When a decoration is original in design, interest becomes intensified. Familarity with material and tools is, of course, important. A hobbyist should become reasonably well acquainted with various leathers, their adaptability to a variety of products, and their utilitarian functions.

Cowhide and calfskin constitute the main tooling leathers. Other types of leather can also be used for stamping, but, by and large, their appropriateness for the purpose of satisfying the requirements of a hobby is limited. Preference for cowhide over calfskin, or vice versa, depends largely on the finished article and its utilitarian function. If one were to select leather for a brief case, heavy cowhide would be the leather of choice, particularly since it is capable of withstanding hard wear. On the other hand, calfskin possesses the



softness and pliability demanded in ladies' handbags and men's wallets (see figure). In general, a leather supply house can readily furnish to the hobbyist scraps of leather that he can test for depth of impression and specific suitability. Once a decision has been reached, he can proceed with the purchase of leather that will meet his purposes.

A leather surface can be covered by any one of a number of different designs merely by tooling the design on the finished side of the material. Few tools are required. Modeling tools are usually shaped to establish specific impressions. One such tool is a combination tracer and beveler. The tracer end is used to transfer the outline of a design from paper to leather; it is also used to deepen the impression so that it is not lost when subsequent wetting of the leather takes place. The beveled end is employed for shaping, rounding off parts of a design, or separating design and background. A background tool has the shape of a spatula. Each end differs in size in order to accommodate various areas. Some modeling tools contain two ballpoint ends. For straight line tracing and deepening, use of a straight metal edge is most satisfactory. The background of a hand-tooled leather article is usually devoid of decoration, since its presence would detract from the main design. In the event a decorated background is contemplated, it can readily be produced by means of background stamps. These can be purchased either in various designs or they can be made by the hobbyist himself in a desirable form from pieces of mild steel. For physicians who wish to experiment with tools to suit individual fancy, dentists' instruments offer a challenge to ingenuity. Home-shaped modelers are quite adequate for production of numerous lines and shapes, differing from purchased tools in that only one end is shaped.

Before a design is transferred to leather, it should be carefully drawn on thin, medium-hard paper. Leather should first be moistened to receive and retain an impression. During the preparatory stage, the unfinished side is sponged sufficiently to indicate water stain on the finished side. Accumulation of moisture in excessive amounts affects the impression and should be avoided. After being properly placed, the paper is attached to the leather by means of clips. Damp leather is unduly sensitive to pressure, and paper clips leave a mark accordingly. However, since it is generally fastened to a marginal site outside of the design itself, the impression produced by a clip rarely damages either design or leather. As soon as paper and leather are attached, the tracer is used to follow the design on paper and to transfer it to leather. The paper pattern is then removed, the remainder of the tooling process consisting of direct contact between modeler and leather. As he proceeds to his goal, a certain degree of originality may be exercised by the craftsman-hobbyist. When modeling a floral pattern, it may be desirable, for example, to tool away from the form in one case or to shape the form in another. Then there are those hobbyists who wish to employ both techniques. It is possible, to a certain extent, to achieve the effect of etching and embossing as well as cutting and piercing.

Some working in the tooling leather medium will be interested in portraits on leather. For this purpose an additional instrument is required—the familiar scalpel. An incision is made and the finished surface separated from the rest of the leather thickness so as to form a pocket. The pockets are then stuffed with cotton to raise the surface, and the leather is glued at the site of incision. This results in a raised cheekbone, a shaped nose, rounded eyes, or any other anatomic features.

Despite a well established step-by-step procedure for tooling leather, the hobbyist is not restricted to a single style or technique. Leather furnishes luxurious opportunity for innovation to creative minds and supple imaginations.

BUSINESS PRACTICE

The following material is based on a public relations manual issued by the Public Relations Department of the American Medical Association.—ED.

EXPLAINING AND COLLECTING MEDICAL FEES

Because many doctors—and patients—are reluctant to broach the subject of fees, the American Medical Association now sells an attractive office plaque that encourages fee discussions with this message: "To All My Patients—I invite you to discuss frankly with me any questions regarding my services or my fees. The best medical service is based on a friendly, mutual understanding between doctor and patient." A physician should be prepared to give his patient an estimate of the cost of his care. The physician who thinks he soothes his patient by saying, "Don't you worry about money; just concentrate on getting well," is side-stepping his responsibility. Some physicians hand patients an estimate of medical expenses before hospitalization. Explanations of medical costs should extend beyond the doctor's own charges. For example, if a patient is to undergo an operation, the physician should explain the surgeon's, anesthetist's, and radiologist's charges; the laboratory fees; and home, hospital, and office call charges as well as the approximate hospital bill, which may include an operating room fee, charges for medicines and dressings, laboratory fees, and the cost of blood transfusions. The importance of calling in another physician for consultation should be explained to patients, and it should be made clear that there will be a separate fee for the consulting physician. People are inclined to blame doctors for all medical costs, even hospital charges. The doctor can avoid misunderstanding by giving the patient an idea of what the whole medical procedure will cost him.

When it comes to collecting medical bills, the following steps are recommended:

1. Send itemized bills regularly.

2. After three monthly statements have been sent and no remittance received, send a reminder note in the fourth month signed either by the doctor's secretary or the doctor himself:

Dear .....:

We thought perhaps you had overlooked this statement which has been charged against your account since .....

3. If there is no reply to the above reminder, a personal letter from the doctor should be sent in the fifth month.

Dear .....:

Since you have not been to see me for some time, I trust that you and your family are all well. My bookkeeper tells me that your bill for $35 has been on our books for several months. If you have questions about the charges or have some other reason for not making the payment, please come into the office and talk to me about it. We want to help you in any way that we can.

4. If no reply is forthcoming, the doctor should write a letter of this type in the sixth month:

Dear .....:

Last month I wrote you that your bill for $35 has been on our books for six months. I thought perhaps we might help you. I was surprised that you did not answer my letter or come in to my office to talk to me about it. Won't you please get in touch with me soon so that we can settle this matter?

5. If a patient ignores this letter, too, he is obviously not acting in good faith. At this point the account may be turned over to an agency for collection and the following letter sent:

Dear .....:

We have sent you statements and reminders and written you several times in regard to your bill for $35, which has been due for the past six months. Since we have not heard from you, we have no other course but to turn the account over to a collection agency. If we do not hear from you within the next 10 days, all further contacts in regard to this bill will be made by a representative of the agency.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Charitable Hospitals: Criteria of Tax Exemption Status.—This was a mandamus action to have the plaintiff's property declared exempt from taxation and removed from the tax rolls. The action was heard in the Supreme Court of Kansas.

The plaintiff, Atchison, Topeka and Santa Fe Hospital Association, alleged that it was incorporated as a non-profit corporation, without capital stock and that the property in question was owned by it and used and operated exclusively for charitable and benevolent hospital purposes. The Kansas constitution provides: "All property used exclusively for state, county, municipal, literary, educational, scientific, religious, benevolent and charitable purposes . . . shall be exempted from taxation." And the statutory provision on the same subject provides: "That the property described in this section, to the extent herein limited, shall be exempt from taxation: . . . All buildings and parts of buildings belonging to scientific, literary and benevolent associations, used exclusively for scientific, literary or benevolent purposes. . . ." The evidence showed that the hospital was operated by funds raised from dues of members, all employees of the Atchison, Topeka and Santa Fe Railroad, and by annual contributions from the railroad in the amount of seven per cent of the dues plus the furnishing by the railroad of transportation, auditing, accounting, and other services at no cost to the hospital association. The hospital was not open to nonmembers except in cases of extreme emergency, however, and the defendant therefore contended that the hospital was an exclusive affair, comparable to an exclusive club, with the benefits accruing only to its closed membership. In a prior case the Supreme Court of Kansas held that a hospital that was owned and managed by a corporation organized for benevolent purposes, that paid no dividends, that devoted all its income to the care of sick or injured persons and to improving and extending its facilities for so doing, and that received and cared for patients without discrimination as to their race, color, or creed was a charity and its property was used exclusively for charitable purposes. The defendants conceded the force of this decision but pointed out that in the present case the hospital facilities were available only to railroad employees who are in good standing and not to the general public. They argued that this distinction took the case out from under the rule announced in the former decision.

Generally, said the Supreme Court, where the statute exempts institutions of purely public charity, an organization limiting its benefits to a restricted class is not exempt. A different rule ordinarily prevails, however, when the property rather than its owners is exempted from taxation if devoted to charitable purposes. Under the Kansas constitution it is the particular property that is exempt and its exemption depends on its use. Those states that hold that property used principally for the benefit only of persons in some way related to the members of a society, an artificial class as it is called, is nonexempt, do so generally for the reason that the law governing the case requires that the charity shall be a purely public charity. The various private charities that provide for any portion of the public, however, relieve the public and all taxpayers of a certain portion of the public burden and are thus a benefit to all; the numerous so-called private charities provide in the aggregate for as great a portion of the poor and dependent, which the state is under obligation to support, as do the so-called public charities. That the benefits of a home for the support of widows and orphans are confined to the members of a particular secret society does not deprive it of the character of a purely public charity within the meaning of a constitutional tax exemption. In the present case, the Supreme Court concluded, the property of the Atchison, Topeka and Santa Fe Hospital Association is not being used or operated in connection with the promotion of any other business. The property, both real and personal, of the association is, therefore, being used exclusively for charitable and benevolent purposes and hence is exempt from taxation pursuant to the provisions of the Kansas constitution. Accordingly, the Supreme Court entered judgment in favor of the plaintiff hospital association. *A. T. & S. F. Hospital Association v. State Commission of R. and T.*, 246 P. (2d) 299 (Kansas, 1952).

MEDICAL MOTION PICTURES

FILM LIBRARY HAS RECORD YEAR

A total of 2,273 films were lent to medical societies, medical schools, hospitals, and other scientific groups in 1953 according to Ralph P. Creer, Secretary, Committee on Medical Motion Pictures. This represents an increase of 185 over the previous year and is a 45% increase in the number of films distributed during 1951. This is in addition to the more than 100 A. M. A. films sent to medical societies and television stations for use on various television programs.

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MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Am. J. Diseases Children, Chicago

86:553-704 (Nov.) 1953

*Use of Ferric and Ferrous Iron in Prevention of Hypochromic Anemia in Infants. W. L. Niccum, R. L. Jackson and G. Stearns.—p. 553.

Unusual Malignant Ovarian Tumor in Young Child. I. H. Einsel, R. E. Bowman and S. Koletsky.—p. 568.

Growth and Metabolism in Normal and Thyroid-Ablated Infant Rhesus Monkeys (Macaca Mulatta): VI. Iodine Metabolism in Normal and Thyroid-Ablated Infant Rhesus Monkeys (Macaca Mulatta). D. E. Pickering, D. A. Fisher, K. G. Scott and others.—p. 574.

*Relationship of Anesthesia to Postoperative Personality Changes in Children. J. E. Eckenhoff.—p. 587.

Pinworm Infection (Enterobiasis) in Children: Comparative Study of Four Oxyuricides. T. S. Bumbalo, F. J. Gustina, J. Bona and R. E. Oleksiak.—p. 592.

Prevention of Hypochromic Anemia in Infants.—Ferric iron as ferric ammonium citrate was given to 115 full-term infants and ferrous iron as ferrous sulfate was given to 37 full-term infants in order to determine the amount and form of iron needed for prevention of hypochromic anemia in infants in whom this disease continues to occur commonly in the latter half of the first year of life. In addition, seven immature or prematurely born infants were studied. The dose of iron given to the infants in their formulas from the 12th to the 52nd weeks of life or longer was 5 mg. daily at 3 months of age, increased to 10 mg. daily after 6 months of age. No instance of gastrointestinal irritation due to the iron was observed. Ferrous iron in the same dosage resulted in significantly higher hemoglobin values in well infants than did ferric iron. The small amounts of iron given daily were sufficient to maintain hemoglobin values at a constant level throughout the latter half of infancy in all full-term infants. Even in infants with severe upper respiratory infections pronounced anemia did not occur, but hemoglobin values were maintained above 10 mg. per 100 cc. Premature infants and infants of multiple birth may need more assistance in the prevention of anemia than is provided by these small daily quantities of iron. A small transfusion at 15 to 20 weeks of age was efficacious in restoring the hemogobin value to near normal, after which 10 mg. of iron daily maintained the hemoglobin at normal levels. The authors' studies corroborated the findings of other workers that severe infectious illness in infancy is accompanied by significant decrease in the hemoglobin level. Mild infections, on the other hand, caused no significant decrease. The amount of iron storage at birth depends on the adequacy of the mother's diet, the length of gestation, and the watchfulness of the obstetrician that the umbilical cord is not clamped until all pulsations cease, so that the baby receives the maximum amount of blood possible. The infant born at term of a healthy well-fed mother will maintain a good hemoglobin level at least up to six months of age. If he receives some iron-containing foods daily after the fourth month of life, probably no other iron supplements will be necessary. An infant receiving only the iron of milk generally shows a slow decrease in hemoglobin level during the latter half of infancy, and, if his original iron store is poor, an iron deficiency anemia will occur in late infancy. In view of the many variables involved in determining the iron available to the infant and the difficulty in evaluating each variable, the effect of a daily dosage of iron maintained at a level sufficiently low to be given in the formula was studied by the authors. The reported results showed that hypochromic anemia was prevented by these small daily amounts (5 to 10 mg.) of iron.

Anesthesia and Postoperative Personality.—A questionnaire survey was made of the parents of 612 children who underwent otolaryngological operations at the hospital of the University of Pennsylvania, correlating the preparation and induction of anesthesia with personality changes in these children. Results showed that 104 (17%) of the 612 children had personality changes that might be attributed in part to inadequate preanesthetic or anesthetic management. Thirty-two per cent of the changes reported were in the form of night cries or terrors, appearing either for the first time or becoming worse after hospitalization. Temper tantrums comprised 26% of the changes; fear phenomena constituted 23%; and the remainder (19%) pertained to bed-wetting. The younger the child the more likely is the development of personality changes. Unsatisfactory preanesthetic medication and induction of anesthesia is associated with a high incidence of personality changes in young children. Bed-wetting occurred five times more commonly after the use of vinyl ether (Vinethene), than after ethyl chloride, cyclopropane-nitrous oxide, or thiopental.

Blood, New York

8:965-1060 (Nov.) 1953

Clinical Evaluation of New Antimetabolite, 6-Mercaptopurine, in Treatment of Leukemia and Allied Diseases. J. H. Burchenal, M. L. Murphy, R. R. Ellison and others.—p. 965.

Thrombocytopathic Purpura with Normal Prothrombin Consumption: Hemorrhagic Diathesis Due to Partial Platelet Dysfunction. A. de Vries, E. Shafrir, P. Efrati and Z. Shamir.—p. 1000.

Studies on Abnormal Hemoglobins: VIII. Gelling Phenomenon of Sickle Cell Hemoglobin: Its Biologic and Diagnostic Significance. K. Singer and L. Singer.—p. 1008.

Studies in Rh Sensitization: VI. A-B-O Blood Groups and Rh Subtypes in Sensitized and Nonsensitized Rh Negative Pregnant Women. A. S. Wiener, R. Nappi and E. B. Gordon.—p. 1024.

Fatal Transfusion Reaction Due to Kell Factor. F. Ottensooser, O. Mellone and A. Biancalana.—p. 1029.

Bone Marrow Plasmocytosis: Review of 60 Cases. H. Klein and M. Block.—p. 1034.

Immunohemolytic Mechanism in Vivo: Mode of Destruction of Sensitized Red Cells in Living Organism. C. Wasastjerna.—p. 1042.

Diseases of Nervous System, Chicago

14:289-320 (Oct.) 1953. **Partial Index**

*Invert Sugar in Insulin Coma Therapy. M. Mills Jr. and F. J. Moore.—p. 291.

Personality and Social Implications in So-Called "Psychopathic Personality." E. E. Mueller and B. H. Preston.—p. 296.

Integration of Disintegrated Personality. J. L. McCartney.—p. 305.

Group Psychotherapy with Wayward Girls. B. Kotkov.—p. 308.

Hysterical Amnesia Treated by Hypnosis: Psychiatric and Psychological Aspects. S. M. Izner, J. Goldman and R. Leiser.—p. 313.

Carbon Dioxide Maintenance Therapy in Neuroses and Alcoholism. A. A. LaVerne and M. Herman.—p. 316.

Invert Sugar in Insulin Coma Therapy.—Therapeutic insulin coma is at present terminated either by sugar in a gastric gavage or with intravenous injections of either 33.3 or 50% dextrose. It occurred to Mills and Moore that invert sugar, which is composed of equal parts of D-glucose and D-fructose, possesses certain characteristics that might make it advantageous for use in routine termination of insulin hypoglycemia or for emergency intravenous termination in those comas routinely terminated by gavage. The product is available commercially in 5% and 10% solutions. One-half of the patients subjected to insulin shock therapy at the Veterans Administration hospital in Hous-

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Titles marked with an asterisk (*) are abstracted.

ton, Texas, served as controls, their insulin coma being terminated by the rapid intravenous administration of 100 cc. of 50% dextrose. The remaining half of the patients was given 20% invert sugar by the same route and in the same amount. The study was continued for a month, during which a total of 89 comas were terminated with 100 cc. of 50% dextrose and 132 comas were terminated with 100 cc. of 20% invert sugar. It was found that there was no significant difference in the time required for clinical arousal from coma when invert sugar was used instead of dextrose, and this was also true when the electroencephalogram was used to determine arousal. Invert sugar was much less irritating to the tissues at the site of injection. Invert sugar gives a much more stable blood level immediately after injection than does dextrose, and it is believed that this fact may, by eliminating compensatory hypoglycemia, help to prevent secondary comas. The authors conclude that 20% invert sugar is at least as effective as 50% dextrose in returning to consciousness patients in insulin hypoglycemia. Insulin coma patients provide an excellent opportunity for further research in carbohydrate metabolism.

Journal Lab. and Clinical Medicine, St. Louis

42:665-832 (Nov.) 1953

An evaluation of Preservation of Human Blood Stored in Experimental Plastic Containers: I. In Vitro Studies. R. L. Wall, G. Shinowara, B. Bouroncle, and others.—p. 665.
Id.: II. In Vivo Studies. R. L. Wall, N. M. Buckley and C. A. Doan. —p. 674.
Diketogulonic Acid and Diabetes Mellitus. A. W. Marcovich and J. F. Marcovich.—p. 681.
Effect of Dialized Concentrated Human Urine on Renal Function in Human Being. J. Nichols.—p. 685.
Relation of Acute Changes in Colloidal Osmotic Pressure to Body Weight in Patients with Hepatic Cirrhosis and Ascites. M. M. Best and J. D. Wathen.—p. 688.
Stability of Viral Potency of Smallpox Vaccine When Prepared in Calf Globulin, Dehydrated, and Stored Without Refrigeration. E. Cardone. —p. 693.
Tocopherol Response Curves and Fat Absorption. J. Pomeranze and R. J. Lucarello.—p. 700.
Influence of Alcohol Consumption on Hepatic Function in Healthy Gainfully Employed Men. L. Zieve and E. Hill.—p. 705.
Antirabbit Platelet and Red-Cell Factors in Normal Blood. C. W. Mushett, E. H. Reisner Jr., L. Weiner and others.—p. 713.
Studies on Platelets: XI. Antigenicity of Platelets and Evidence of Platelet Groups and Types in Man. M. Stefanini, G. I. Plitman, W. Damesbek and others.—p. 723.
Uptake of Subcutaneous and Intramuscular Silver-Coated Radioactive Gold Colloids by Lymph Nodes in Dogs. A. H. Jackson, F. E. Staggers and P. F. Hahn.—p. 739.
Effect of Large Doses of Cortisone upon Ability of Reticuloendothelial Cells to Phagocytose Streptococci. B. J. Clawson and S. T. Nerenberg. —p. 746.

Journal Nat. Cancer Inst., Washington, D. C.

14:229-456 (Nov.) 1953. Partial Index

Quantitative Studies on Multiplication of Neoplastic Cells in Vivo: I. Growth Curves of Ehrlich and MC1M Ascites Tumors. G. Klein and L. Révész.—p. 229.
Method for Quantitative Spectrophotometric Measurement of 7-Hydroxy-2-Acetylaminofluorene. C. M. Damron and H. M. Dyer.—p. 279.
Prevention of Irradiation-Induced Lymphoid Tumors in C57BL Mice by Spleen Protection. E. Lorenz, C. C. Congdon and D. Uphoff.—p. 291.
Influence of Bone-Marrow Injections on Involution and Neoplasia of Mouse Thymus After Systemic Irradiation. H. S. Kaplan, M. B. Brown and J. Paull.—p. 303.
Influences of Heredity and Mammary Tumor Agent on Occurrence of Mammary Tumors in Hybrid Mice. H. B. Andervont and T. B. Dunn. —p. 317.
Responses of Strain DBA1/2 Mice, Without Mammary Tumor Agent, to Oral Administration of Methylcholanthrene. H. B. Andervont and T. B. Dunn.—p. 329.
Nature and Staining Reactions of Fibroma-Cell Inclusions of Shope Fibroma of Rabbit. E. R. Fisher.—p. 355.
Induced Adaptation in Tumor: Specificity of Change. M. K. Barrett, M. K. Derringer and W. H. Hansen.—p. 381.
Complement Fixation in Animal Neoplasia: VI. Development of Reaction in Various Breeds of Rabbits Carrying Brown-Pearce Carcinoma. S. W. Lippincott, H. Thornton, L. D. Ellerbrook and others.—p. 395.
Studies of Carcinogenic Effect of Urethan on Transplanted Lung Tissue in Strain A Mice. R. A. Malmgren and E. A. Saxen.—p. 411.
Leukoedema and Keratosis in Relation to Leukoplakia of Buccal Mucosa in Man. H. R. Sandstead and J. W. Lowe.—p. 423.
Concentration of Myelokentric and Lymphokentric Acids from Serum and Plasma of Leukemic Patients. D. L. Turner, F. R. Miller and J. S. Flint.—p. 439.

New York State Journal of Medicine, New York

53:2271-2414 (Oct. 15) 1953. Partial Index

Electrolyte Disturbances in Diabetes. M. Fabrykant.—p. 2317.
Cardiac in Industry. M. Kutzer.—p. 2323.
Occupational Dermatitis as Encountered by Part-Time Industrial Physician. M. E. Goebel and R. A. Havrilla.—p. 2327.
Rheumatoid Arthritis in Industrial Medicine. A. L. Watkins.—p. 2330.
Ion Exchange Resins in Management of Edema. G. E. Miller.—p. 2335.
Role of Antibiotic Drugs in Treatment of Tuberculosis. F. Beck. —p. 2341.
Paraplegia in Lumbar Intervertebral Disk Protrusions, with Remarks on High Lumbar Disk Herniation. C. J. Graf and W. B. Hamby. —p. 2346.
*Infrequency of Uncomplicated Coronary Artery Disease and Myocardial Infarction as Causes of Cardiac Hypertrophy and Death, Especially in Females, Based on Survey of 8,500 Necropsies. H. Gross, A. Jezer, N. Somberg and E. B. Polin.—2358.

SYMPOSIUM: PROBLEMS OF AGING

National Significance of Aging. C. Tibbitts.—p. 2363.
New Medical Horizons in Aging. R. Harris.—p. 2367.
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Institutional Care for the Aging. I. J. Brightman and P. F. Birkel. —p. 2372.
Treatment of Postoperative Anorectal Strictures with Suppositories of Vitamin E. M. Ant.—p. 2376.
Herpetic and Postherpetic Pain Treated with Cortisone and ACTH. L. Frank and R. Lysiak.—p. 2379.

Causes of Cardiac Hypertrophy and Death.—A survey was made of 8,500 necropsies to determine the occurrence of death from uncomplicated coronary artery disease in both sexes up to the age of 70 years. Of these, 3,500 necropsies were analyzed from a hospital for chronic diseases, 4,550 from three general hospitals, and 450 from the Armed Forces Institute of Pathology. Cases with (1) blood pressure of 150 mm. Hg systolic and 100 mm. Hg diastolic or more, (2) heart weights of 400 gm. or more, (3) nephrosclerosis, and (4) histological evidence of generalized cardiac fiber hypertrophy not due to valvular disease or myocarditis were regarded as indicative of previous hypertension and were, therefore, excluded. At the hospital for chronic diseases the incidence of uncomplicated coronary artery disease was 0.65%. At the three general hospitals the proportion ranged from 7.95% to slightly more than 10%. The incidence of uncomplicated coronary artery disease might even be smaller if it were possible to determine the number of cases of hypertension with small hearts without nephrosclerosis or an adequate history of elevated blood pressure. Since nephrosclerosis is concomitant with hypertension, an attempt was made to answer the question as to whether coronary disease and cardiac infarction cause cardiac hypertrophy. Results of comparing the incidence of cardiac hypertrophy in cases of myocardial infarction, both with and without nephrosclerosis, indicated that nephrosclerosis is directly related to cardiac hypertrophy and that myocardial infarction is probably not causally related to cardiac hypertrophy. Analysis of 450 sudden deaths among young soldiers showed a high percentage of hypertension, especially if left ventricular or generalized cardiac hypertrophy was regarded as indicative of this condition. The incidence of uncomplicated coronary artery disease among these deaths was not large, when it is considered that the material was pooled from two world wars, Civilian Conservation Corps camps, and civilian government employees comprising millions of personnel. Death was frequently due to coronary insufficiency resulting from the rigors of military life. Uncomplicated coronary artery disease occurs in clinical cardiac practice, especially in men, but is not common as a cause of death in hospital practice in either sex. The idea that patients die on the way to the hospital is dispelled by its uncommon occurrence in the files of the coroner. In the absence of cardiac hypertrophy, coronary artery disease does not cause chronic congestive failure frequently. With the subsequent development of a collateral circulation there also may be freedom from coronary insufficiency.

South Carolina Medical Assn. Journal, Florence

49:259-280 (Oct.) 1953

Erythroblastosis Fetalis. G. F. Young and M. W. Beach.—p. 259.
Involutional Depressive States. R. R. Mellette Jr.—p. 263.
Charleston Heart Demonstration Program: Preliminary Report. C. L. Macha Jr.—p. 268.

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British Medical Journal, London

2:1005-1058 (Nov. 7) 1953

*Isoniazid in Combination with Streptomycin or with P.A.S. in Treatment of Pulmonary Tuberculosis. G. Marshall, J. W. Crofton, R. Cruickshank and others.—p. 1005.
Desensitization to Streptomycin and P.A.S. J. Crofton.—p. 1014.
*Effect of Hexamethonium Bromide on Cerebral Circulation in Hypertension. H. A. Dewar, S. G. Owen and A. R. Jenkins.—p. 1017.
Detection of Achlorhydria Without Intubation. H. Conway and R. W. Meikle.—p. 1019.
"Lente" Insulin (Insulin Zinc Suspension): Further Studies. W. Oakley.—p. 1021.
New Insulins—Lente, Ultralente, and Semilente. I. Murray and R. B. Wilson.—p. 1023.
Insulin Zinc Suspensions. J. D. N. Nabarro and J. M. Stowers.—p. 1027.
Classification of Various Insulins. F. Gerritzen.—p. 1030.

Chemotherapy of Pulmonary Tuberculosis.—A comparative study of the effects of isoniazid combined with streptomycin and of isoniazid combined with *p*-aminosalicylic acid was carried out on 391 patients with pulmonary tuberculosis after three months' treatment in 50 hospitals. Of the 391 patients, 119 were given 1 gm. of streptomycin daily and 100 mg. of isoniazid twice daily; 100 patients received 1 gm. of streptomycin twice a week plus 100 mg. of isoniazid twice daily; 101 patients were given 5 gm. of the sodium salt of *p*-aminosalicylic acid four times daily plus 100 mg. of isoniazid twice daily; and the remaining 71 patients received 5 gm. of the sodium salt of *p*-aminosalicylic acid twice daily plus 100 mg. of isoniazid twice daily. Three groups of patients were studied. Group 1 included those with acute rapidly progressive disease of recent origin. Group 2 was comprised of those with other forms of pulmonary tuberculosis considered suitable for chemotherapy. Group 3 included those with chronic disease unlikely to respond to streptomycin combined with *p*-aminosalicylic acid. A full comparison of the four methods of treatment in all three groups of patients will be made when results for more patients are available. The present report is concerned with the principal comparison of therapeutic results obtained in patients in groups 1 and 2 treated with 1 gm. of streptomycin daily plus 200 mg. of isoniazid daily (called SH patients) with those treated with 20 gm. of *p*-aminosalicylic acid (sodium) daily plus 200 mg. of isoniazid daily (called 20 PH patients). The distribution of patients with severe and less severe illness was similar in the SH patients and in the 20 PH patients. After three months of treatment, the general condition had improved in 89% of the SH patients and in 88% of the 20 PH patients. The average gain in weight was 12.8 lb. (5.8 kg.) for the SH patients and 10.8 lb. (4.9 kg.) for the 20 PH patients. The temperature was restored to normal in 79% of febrile SH patients and 85% of febrile 20 PH patients. The erythrocyte sedimentation rate of 21 or more before treatment was reduced to 10 or less in 37% of SH patients, compared with 46% of 20 PH patients. Changes in radiographic appearances were independently assessed by a radiologist unaware of the treatment of any patient. Two plus or three plus improvement was observed in 54% of the SH patients and in 42% of the 20 PH patients. There were two radiographic deteriorations and one death on each treatment. None of the reported differences are statistically significant. The proportion of patients bacteriologically negative both on direct examination and on culture, at a single examination at three months was 65% for the SH patients and 66% for the 20 PH patients. Bacillary resistance to isoniazid was observed in 2 of 39 SH patients with positive cultures tested at three months, compared with none in 29 similar 20 PH patients. Bacillary resistance to streptomycin was observed in 1 of 38 SH patients with positive cultures and to *p*-aminosalicylic acid in 1 to 28 similar 20 PH patients. It is concluded, judging solely from the results at three months, that *p*-aminosalicylic acid sodium in doses of 20 gm. daily combined with isoniazid in doses of 200 mg. daily is a very effective combination of drugs, both clinically and bacteriologically; it ranks with the most efficacious treatments so far studied, namely streptomycin in doses of 1 gm. daily plus isoniazid in doses of 200 mg. daily and streptomycin in doses of 1 gm. daily plus *p*-aminosalicylic acid sodium in doses of 20 gm. daily.

Hexamethonium Bromide and Cerebral Circulation.—The cerebral blood flow was estimated by a modification of the nitrous oxide method in six patients between the ages of 32 and 62 with arterial hypertension before and after administration of hexamethonium bromide. The mean arterial blood pressure fell by an average of 30%, but no significant change occurred in mean cerebral blood flow. The rate of cerebral oxygen utilization was measured in four of the six patients and showed no essential alteration. These findings imply that cerebral nutrition and metabolism will not ordinarily be impaired by the treatment of hypertensive patients with hexamethonium bromide, since cerebral vascular relaxation to a degree sufficient to maintain adequate cerebral blood flow and oxygen consumption accompanies reduction of blood pressure of the order obtained in the authors' patients. The possibility of an increased likelihood of cerebral thrombosis in patients in whom arterial disease favors the occurrence of such a complication cannot be considered to be eliminated by the present findings.

Journal of Pathology and Bacteriology, Edinburgh

66:1-334 (July) 1953. **Partial Index**

*Medial Thinning in Atheroma. T. Crawford and C. I. Levene.—p. 19.
Prolonged Generalized Vaccinia. G. F. M. Hall, A. C. Cuniffe and J. A. Dudgeon.—p. 25.
Developmental Remnants in an Adult Human Kidney. F. R. Johnson and J. C. Anderson.—p. 39.
Aureomycin in Experimental Liver Failure. P. C. Reynell.—p. 47.
Pathology of Thyroid in Addison's Disease. J. C. Sloper.—p. 53.
Factors Affecting Adrenaline Pulmonary Oedema. F. B. Wright and W. K. Whitten.—p. 63.
*Spread of Prostatic Carcinoma to Bones. L. M. Franks.—p. 91.
Pathological Findings in Cases of Polyarteritis Nodosa After Treatment with Adrenocorticotropic Hormone. W. St. C. Symmers.—p. 109.
Carotid-Body-Like Tumours of Jugular Bulb and Middle Ear. J. C. Gaffney.—p. 157.
Effect of Systemic Disease on Adrenal Cortex of Child. H. B. Stoner, H. J. Whiteley and J. L. Emery.—p. 171.
Carcinoma of Parathyroid Gland. S. Wray.—p. 231.
Pathological Anatomy of Simple Pneumokoniosis in Coal Workers. A. G. Heppleston.—p. 235.

Medial Thinning in Atheroma.—Accounts of the histology of atheroma pay little attention to the media; it is usually passed over with the statement that it may show thinning, which is said to be a pressure atrophy due to compression by the overlying plaque. During a recent study of other aspects of aortic atheroma, Crawford and Levene noticed that even quite trivial plaques were associated with medial thinning. They feel that the idea that it is a pressure atrophy is not founded. They measured the amount of medial thinning at atheromatous areas from aortas and iliac arteries fixed (*a*) in the usual way and (*b*) in the distended state at arterial pressure. All but one of 134 plaques from undistended vessels and all 76 plaques from vessels fixed in distention showed definite medial thinning. In the distended vessels, the ordinary atheromatous plaques do not project into the lumen but lie in a depression in the media that may bulge outward. Only advanced plaques with recent thrombotic accretions project noticeably into the lumen—the familiar intimal bulge is a post mortem artefact. Physical considerations rule out pressure as the cause of the medial thinning, and the occurrence of outward bulging of the media indicates that something more than a disuse atrophy is concerned. The early and constant appearance of the medial thinning supports the contention that it is not a secondary result of the atheromatous process but an essential part of it, and the lesion as a whole is comparable to a shallow aneurysm partially or completely filled by the plaque of intimal thickening.

Spread of Prostatic Carcinoma to Bones.—Secondary deposits from malignant prostatic tumors are commonly found in the bones of the pelvis, the femurs, and the vertebral bodies, but there was no adequate explanation of this distribution of metastases until Batson in 1940 suggested that the vertebral venous system offered a possible path of spread. The aim of the studies described here was to confirm the fact that direct vascular communications exist between the prostate and the pelvic and spinal bones. Injections of a commercial barium suspension (Micropaque) of standard particle size (0.2 μ) were made into the deep dorsal vein of the penis of 15 adult male cadavers in the age range 43 to 75 years, using a pressure of

60 to 100 mm. Hg. About half a liter of suspension was used in each case. The bodies were then radiographed. The prostate, and in some cases the thoracic and lumbar vertebrae, the femurs, and the pelvic and other bones were then removed, fixed in neutral buffered formaldehyde (Formalin), cut into thin slices (2 to 4 mm.), filmed again with a crystallographic tube, and then examined histologically. A direct communication between the prostatic veins, the vertebral venous system, and the veins of the pelvic bones was confirmed by these methods. The distribution of bone metastases of prostatic carcinoma may be explained by spread along these veins. Other possible paths by which prostatic carcinoma may reach the skeleton are briefly discussed.

Lancet, London

2:947-1000 (Nov. 7) 1953

Objective Examination Papers in Medical Curriculum. D. C. Sinclair. —p. 947.
Resuscitation of Newborn with Intragastric Oxygen: (Akerren's Method). H. K. Waller and D. Morris.—p. 951.
Management of Postmaturity. D. Racker, G. H. Burgess and G. Manly. —p. 953.
"Reactions" to Dextran. A. W. Wilkinson and I. D. E. Storey.—p. 956.
*Risks of Tonsillectomy. W. McKenzie.—p. 958.
Serum-Cholesterol Levels in Elderly People Living at Home. W. Hobson, A. Jordan and C. Roseman.—p. 961.
*The Insulin Myth. H. Bourne.—p. 964.
Patent Vitello-Intestinal Duct with Associated Fistula and Prolapse. S. Howard, P. D. Moss and S. O'Domhnaill.—p. 968.
Traumatic Rupture of Bile-Ducts. J. H. M. Walker.—p. 969.
Clevedon Positive-Pressure Respirator. J. Macrae, G. D. W. McKendrick, J. M. Claremont and others.—p. 971.

Risks of Tonsillectomy.—According to McKenzie the chance of serious infection after tonsillectomy has nearly disappeared. Before the discovery of penicillin, otitis media was quite common after tonsillectomy in children, and many surgeons can remember a subsequent death from meningitis. Serious infection after tonsillectomy is now rare. The anesthetic risk also is less now, if the anesthetist is a specialist. The inexpert keep their patients under too light anesthesia. The author feels that the best anesthetic for tonsillectomy is thiopental (Thiopentone) sodium given intravenously combined with an intratracheal tube that delivers oxygen. Hemorrhage at operation is likely if there has been a recent infection, e. g., a sore throat and a cold, or if there has been a peritonsillar cellulitis at any time, because of the resulting peritonsillar fibrosis. Discussing the risks during recovery from the anesthetic, the author says that the patient should be on his side with his face visible, and both hands should be in front of the chest. If the patient is not on his side and the airway is not free, there is a risk of sudden death from asphyxia by the tongue falling back. If active bleeding is noticed just before complete consciousness returns, the patient should be brought back to the operating room at once. If a second operation has to be undertaken for hemorrhage, the best time is before recovery from the first operation. The correct treatment for hemorrhage within 24 hours is to tie the blood vessel while the patient is under general anesthesia. The only exception is in the case of a well-disciplined adult who may allow local pressure of a swab if he has been given a small injection of morphine first. The bleeding may sometimes come from the nasopharynx. If it has been serious, the blood vessel should be tied and a gauze pack left in the nasopharynx for 24 hours. Hemorrhage after the first 24 hours after operation is seldom serious; the usual cause is the separation of the slough from the tonsillar fossa. Since this may not take place for 10 or 12 days, secondary hemorrhage may be delayed for that length of time. The author also points out that a swab can easily be left in the upper part of the tonsillar fossa. To avoid this, he touches both fossae and the nasopharynx and then looks into them with the help of a head light.

The Insulin Myth.—Bourne shows that there is no sound basis for the opinion that insulin coma therapy counteracts the schizophrenic process in some specific manner and that its therapeutic effects are greatly superior to those obtainable by electroconvulsive therapy. The summary of a series of 376 schizophrenic soldiers, 186 of whom he followed up by letter two years later, suggests that acute schizophrenic illnesses are becoming more benign. Of the 376, 84% were discharged, nearly all within nine months, as recovered or improved sufficiently not to need further hospital care, and the follow-up indicated no strikingly extensive or rapid relapse rate. For 156 patients treated with electroconvulsive therapy, the corresponding figure was 83%; of 15 treated with insulin coma, with or without electroconvulsive therapy, 9 resumed ordinary life, while for 205 untreated patients the figure was 88%. It should be added that in both treated groups a substantial number of psychoses subsided long after the treatment could have been responsible. Among the fallacies arising from the nature of insulin therapy the author mentions that the mode of selection of patients for insulin coma is biased. Reports are uniform that the best results are obtained where, without any treatment, the prognosis would be most favorable; so cases selected for insulin treatment are only those considered most likely to benefit—that is to say, to get better anyway. It is no wonder that an "impression" is so often met that the quality of remission after insulin is superior. It would be surprising if it were otherwise. Practically all reports comparing insulin favorably with electroconvulsive therapy omit how patients were chosen for either treatment; but they contain details from which this bias can be strongly suspected. The evidence for the value of insulin treatment is unconvincing.

Minerva Ginecologica, Turin

5:465-508 (July 31) 1953. **Partial Index**

Prophylaxis and Treatment of Thrombophlebitis with New Anticoagulant: Tromexan. D. Cazzola.—p. 465.
*Experimental Studies on Pathogenesis of So-Called Amniotic Fluid Embolism: Disease of P. E. Steiner and C. C. Lushbaugh. U. Narducci. —p. 477.
Influence of Amniotic Fluid on In Vitro Velocity of Clot Retraction and Possibilities of Utilizing This Property for Rapid Transfusion Technique E. Revelli.—p. 486.

Amniotic Fluid Pulmonary Embolism.—Pulmonary embolism caused by amniotic fluid is characterized by sudden shock during or immediately after a difficult labor. Only 43 cases of the disease (all fatal) have been reported since Steiner and Lushbaugh first described it in 1941. Macroscopic examination reveals pulmonary edema and microscopic examination a diffuse embolism in the pulmonary arterioles and capillaries in which amniotic fluid elements, such as meconium mucus, epithelial squamae, and vernix caseosa, are present. The pathogenesis of the disease has not been clearly established, although it is known that the amniotic fluid enters the maternal circulation through the placental barrier because of an oversize fetus, or strong and tetanoid contractions of the uterus with excessive compression of the amniotic fluid, or laceration of the membranes. The mechanism of action of the amniotic fluid after its penetration into the maternal vascular system is still obscure. Some authors attribute great importance to the anaphylactoid reaction that follows the embolism, others to alteration of the blood coagulation mechanism because of the thromboplastin-like activity of the amniotic fluid, and others to anaphylaxis that follows a primary sensitization of the mother to the amniotic fluid. The author performed a series of experiments on rabbits and guinea pigs. Amniotic fluid alone even in massive doses and high concentrations did not cause diffuse pulmonary embolism and death in the animals. On the other hand, meconium alone even in low concentrations caused massive pulmonary embolism and death. A comparative experimental study revealed that the mechanism of action of meconium mucus embolism is parallel to that of fat embolism. The shock that occurs in the course of this syndrome is secondary to the embolism. The alterations induced on the blood coagulation mechanism by the thromboplastin-like activity of the amniotic fluid may aggravate the patient's condition. It may be that this embolism could be overcome if it occurred in patients in whom a difficult labor and a difficult puerperium had not impaired the circulation and the heart. The author states that the appropriate term for this disease should be "meconium embolism" rather than amniotic fluid embolism. Even more appropriate is the term Steiner and Lushbaugh's disease.

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BOOK REVIEWS

Living with a Disability. By Howard A. Rusk, M.D., and Eugene J. Taylor. In collaboration with Muriel Zimmerman, O.T.R., and Julia Judson, M.S., Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. Cloth. $3.50. Pp. 207, with 281 illustrations. Blakiston Company (division of Doubleday & Company, Inc.), Garden City, New York; 575 Madison Ave., New York 22, 1953.

For several years the group of workers at the Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center has been collecting descriptions of "self-help devices and gadgets that might aid disabled persons in the performance of the daily activities of life and work." These descriptions were then included in a series of publications that were made available to professional workers. This well-printed and profusely illustrated textbook includes these descriptions in one convenient volume, which can be used as a guide by rehabilitation workers or by the handicapped persons themselves. A major objective in treating any handicapped person is to assist him to become independent and self-sufficient, and the devices described in this book help to achieve this objective.

The descriptions are prepared in a style that is readily understandable, even for nonprofessional persons. This is the first textbook to provide detailed descriptions and sources of supply of so many modern aids toward rehabilitation of handicapped persons. It is divided into sections dealing with (1) taking advice, (2) getting three meals a day, (3) looking one's best, (4) keeping up appearances, (5) doing things differently, (6) getting around indoors and out, (7) conquest of the kitchen, (8) living with one's home, and (9) planning time to relax. Among the interesting devices described and pictured are special eating utensils that can be used by persons with severe weakness or deformity of the upper extremities; devices to aid handicapped persons in dressing themselves, in ambulation, and in attending to their toilet; apparatus to assist in writing, typing, telephoning, page turning, and reading; and modifications of wheel chairs, walkers, crutches, canes, supports, automobile controls, kitchens, kitchen and household equipment, and recreational equipment to permit their use by handicapped persons. This interesting book should be extremely useful in helping many disabled persons to self-sufficiency and independence. It is recommended to all physicians and health workers who deal with patients having serious physical disabilities.

Diseases of Women. By Robert James Crossen, A.B., M.D., F.A.C.S., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, St. Louis. Tenth edition. Cloth. $18.50. Pp. 935, with 990 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1953.

The first edition of this book appeared in 1907 and the ninth in 1941. The present editor has carried on the work of his late father. Two chapters in the previous editions have been deleted and several new ones added, notably one by Willard Allan entitled "Endocrine Relations Concerned in the Ovarian Cycle" and one by A. N. Arneson entitled "Radiation Therapy." The chapter on anatomy and physiology occupies one-eighth of the entire book. In spite of the fact that the author emphasizes the importance of the psychosomatic aspects of gynecologic problems in the preface, the section devoted to psychosomatic aspects of gynecology occupies only three and a half pages. The words psychosomatic, psychogenic, and psychotherapy do, however, appear in the discussions of puberty, dysmenorrhea, dyspareunia, menopause, pruritus vulvae, and sterility. The author devotes five pages and many illustrations to vaginal pessaries. Many of the illustrations are borrowed from other sources, and most of these are instructive and definitely worth reproducing. It is, however, questionable whether, in such a textbook as this, it is proper to reproduce illustrations that were prepared by pharmaceutical companies for use in their advertisements. These are minor criticisms of a book that is well written, abundantly illustrated, well printed, and up to the standards of the previous editions. It contains a vast amount of information valuable for both students and practicing physicians, and it will undoubtedly continue to occupy a high position among textbooks of gynecology.

Clinical Disorders of the Heart Beat. By Samuel Bellet, M.D., Director, Division of Cardiology, Philadelphia General Hospital, Philadelphia. Cloth. $8.50. Pp. 373, with 164 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1953.

Dr. Bellet is eminently qualified to write a book on any phase of heart disease, and this text is based on his own wide experience. It is both a reference and a textbook, which aims to interest and inform the internist, general practitioner, and cardiologist. It ably attains this objective. It is comprehensive, accurate, easily readable, profusely illustrated, and has ample references. It should prove of greatest value to the general practitioner. The cardiologist might find much in it that seems elementary. As a reference book, it compares favorably with others published recently. The chapters on premature contractions and auricular flutter are particularly comprehensive and simply treated. This book should prove useful to physicians in general practice, the internist, the cardiologist, and to the intern or resident.

The Nursing Mother: A Guide to Successful Breast Feeding. By Frank Howard Richardson, M.D., F.A.C.P., F.A.A.P. Cloth. $2.95. Pp. 204, with illustrations. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1953.

This excellent book has been written specifically to aid the average mother in satisfactorily nursing her infant. Information included is designed to encourage breast feeding and to give the normal woman all the knowledge she needs to nurse her infant. The advantages of breast feeding, including its psychological values, are also presented. Information concerning nursing brassières, nipple shields, and other equipment used by nursing mothers is given. There are also specific instructions for the preparation of the breasts during pregnancy. The value of the book is enhanced by the inclusion of a comprehensive list of questions and answers. An effort is made to dispel the many superstitions and false notions about breast feeding. Every expectant mother and every mother with a newborn infant could read this book with advantage.

Diseases of the Liver, Gallbladder and Bile Ducts. Volume I and II. By S. S. Lichtman, M.D., F.A.C.P., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York. Third edition. Cloth. $22 per set. Pp. 608; 609-1315, with 223 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1953.

As in the previous editions, Dr. Lichtman reveals his extensive knowledge of the literature on hepatic and biliary diseases. The wide acceptance of the previous editions attests the reliability of the author's material, which begins with the structure of the liver and ends with the treatment of biliary tract diseases. This book is a veritable encyclopedia of all the literature that has been published to date on diseases of the liver. The author critically comments on the contributions and justifiably takes exception to some of the older concepts that have been presented by previous students in this field. Each chapter has been enlarged, and the therapy has been put at the end of each chapter, wherever possible. In the chapter on cirrhosis of the liver, the author discusses its complications and the controversial aspects of the therapy. He concludes that corticotropin (ACTH) and cortisone are not of great value in the therapy of this disease. The student in this field, who would like to know what has been published on the whole problem of liver and gallbladder and bile duct disease, will find an

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

extensive bibliography in this outstanding reference book. It is a necessary addition to any medical library but particularly to that of the physician who deals with liver and biliary diseases in practice.

The Hypertensive Disorders of Pregnancy. By Ernest W. Page, M.D., Associate Professor, Obstetrics and Gynecology, University of California School of Medicine, San Francisco. Publication number 188, American Lecture Series, monograph in American Lectures in Circulation, edited by Irvine H. Page, M.D., and A. C. Corcoran, M.D. Cloth. $3.75. Pp. 120, with 2 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois; Blackwell Scientific Publications, Ltd., 49 Broad Street, Oxford, England; Ryerson Press, 299 Queen Street, W., Toronto 2B, 1953.

This monograph has three main chapters: (1) clinical aspects, (2) physiological and biochemical changes in normal pregnancy and toxemia, and (3) etiology of toxemia. Page has modified the classification of toxemias recommended by the American Committee on Maternal Welfare. He divides them into two main groups: (1) specific toxemia of pregnancy, including (*a*) preeclampsia (nonconvulsive) and (*b*) eclampsia (convulsive); (2) clinical entities symptomatically related to toxemia, including (*a*) generalized edema of pregnancy (not accompanied by hypertension or proteinuria), (*b*) essential hypertension and pregnancy, with and without superimposed toxemia, (*c*) primary renal disease (any type) and pregnancy, with and without superimposed toxemia, and (*d*) post-toxemic recurring hypertension in multiparas. He maintains that eclampsia without hypertension or proteinuria is as much a misnomer as eclampsia without convulsions and that uncomplicated disturbances of salt and water balance during pregnancy should be segregated as a clinical entity distinct from preeclampsia. He emphasizes that severe toxemia is characterized primarily by a widespread damage to small blood vessels and that the parenchymal lesions are largely secondary to the vascular disturbance. The composite pathological picture of fatal eclampsia is not duplicated in its entirety by hypertensive disease alone nor by any other known disorder, although the individual morphological lesions may resemble those of some other disease.

Page also points out that the greatest controversy regarding the treatment of eclampsia has revolved about the choice of drugs, while the question of when and how to deliver the child of a woman with toxemia really constitutes the most important decision. The selection of drugs is not so important as the amount of the agents, the methods of using them, and the avoidance of measures that a knowledge of pharmacology and physiology warns us may be harmful. He then outlines his own management of patients with eclampsia. This book contains a vast amount of useful information about the hypertensive disorders of pregnancy. At the end is a well-selected bibliograph, including many papers written by the author. This book is authoritative because Page has done much investigative work in this field. It is highly recommended to everyone interested in obstetrics, pathology, and internal medicine.

Nutritional Studies in Adolescent Girls and Their Relation to Tuberculosis. By Joseph A. Johnston, M.D., Pediatrician-in-Chief, Henry Ford Hospital, Detroit. Cloth. $7.50. Pp. 320, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad Street, Oxford, England; Ryerson Press, 299 Queen Street, W., Toronto 2B, 1953.

This book is a compilation of research findings over a long period of time concerning the storage of nitrogen and its effect on the course of tuberculosis in adolescent girls. The author points out that negative balances or inadequate retention are frequently associated with failure to heal but that this cannot always be established. An extensive comparison of roentgenographic findings and of the nitrogen balance is recorded. The author calls attention to the many variables that must be considered, such as massiveness and repetition of infection, which cannot be accurately measured. Although not a large book, it represents a tremendous amount of work, including a discussion of the amounts of calcium and vitamin D necessary for normal storage in adolescent girls. The author concludes that the best way to prevent endogenous reinfection in tuberculin reactors is the insurance of normal retentions of nitrogen and calcium. This involves an adequate intake and consideration of all factors that influence their utilization. The book is well written, and includes many case histories, graphs, and tables. It should prove valuable to any physician who is interested in tuberculosis.

Emergency Surgery. Bernard J. Ficarra, A.B., Sc.B., M.D., supervising editor. Cloth. $18. Pp. 1000, with 578 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1953.

This monograph covers emergency surgery in a complete manner and is profusely illustrated. A number of the subjects discussed, however, do not appear to come within the province of emergency surgery. For instance, the management of acute low back pain is discussed in detail, even to the surgical treatment of a ruptured intervertebral disc. Persistent hiccough, although disturbing, could hardly be considered an emergency. These are minor defects; on the whole, the authors have prepared an excellent and very complete monograph, which should be in the library of everyone who treats emergencies and should be of value to all general practitioners. As an illustration of the completeness and progressive character of the monograph, excellent chapters on the management of the injured following atomic disaster and on emergency surgery of air casualties are included.

A Ray of Darkness. By Margiad Evans. Cloth. $3. Pp. 191. Roy Publishers, 30 East 74th Street, New York 21, 1953.

The ray of darkness is the epilepsy that abruptly entered the life of the author in the middle of her career as an English writer and poet. The story is autobiographical, introspective, and beautifully written. She describes the subjective phases of her seizures with crystal-clear fidelity. Like Job, she searches for an understanding of this calamity, and, when prose fails, she has in reserve her delicately phrased poetry. As an exposition of what epilepsy can mean to a sensitive, honest, and courageous mind, the book is unique. Incidentally, it points out the difficulties that arise from divided medical opinions and ineffective therapy. Lacking a happy ending, the book nevertheless is food for the minds of those who enjoy fine writing or who can profit from reliving with a patient the experience of a devastating illness. Physicians, psychologists, medical social workers, and many of the reading (and thinking) public, including the millions who are related to epileptics or concerned with their care, will want to read this book.

Adventures in Physiology with Excursions into Autopharmacology. Selection from scientific publications of Sir Henry Hallett Dale, G.B.E., F.R.S., M.D. With introduction and recent comments by author. Cloth. $19.50. Pp. 652, with illustrations. [The Macmillan Company, 60 Fifth Ave., New York 11]; Pergamon Press, Ltd., 2, 3 & 5 Studio Place, Kinnerton Street, Knightsbridge, London, S.W.1, 1953.

Of the 253 published works by this author, only 30 have been chosen for this volume. The papers chosen relate mainly to the two lines of research that have dominated the author's scientific activity: the action of epinephrine and acetylcholine and their relationship to the chemical phase in the transmission of the effects of nerve impulses and the action of histamine and the general effects of this compound as related to its contribution to local and general reactions, by which the organism as a whole and its separate tissues respond to various immunological, chemical, or physical assaults on the integrity of their living cells. In addition to the scientific papers, the volume contains a complete bibliography of the author's work from 1899 to the present and an admirable introduction which relates the body of the book to incidents in the author's scientific life. The papers here collected were written between 1906 and 1938, and they have been reproduced without alteration. The comments that Sir Henry has appended to each of the papers are especially helpful. These comments bring evidence and ideas from the past into relation with present knowledge and theories. It is hoped that in a second printing of this volume a short biographical sketch of the author will be included. This book is recommended to all who are interested in recent developments in physiology, pharmacology, and experimental pathology.

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QUERIES AND MINOR NOTES

TOXICITY OF AMINOPHYLLINE

To the Editor:—*Recently I treated a 3½-year-old boy for asthma and bronchitis by prescribing use of an Aminet (containing aminophylline, pentobarbital sodium, and benzocaine) suppository, child size. One-half hour after the first suppository was inserted into the rectum, the child became pale and limp. His heart rate rose to 140, and this condition persisted for three hours. It looked as though the child were going to die. He was placed in an oxygen tent and treated supportively. He responded promptly. I treated another child 2 years of age for a similar condition. This patient presented the same picture plus vomiting. His wheezing cleared up, but he died in spite of supportive therapy. An autopsy revealed no major abnormalities. Microscopic studies revealed a fulminating virus infection of the lungs. I feel that the aminophylline contributed to his demise. An initial dose of one-half a suppository would be safer. Have any cases been reported in which death could have been due to aminophylline used in this way?*

Nerio W. Pioppi, M.D., Southbridge, Mass.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—The suppositories in question contain 0.25 gm. of aminophylline, 0.05 gm. of pentobarbital, and 0.03 gm. of benzocaine. Severe reactions, with a few deaths, have been reported from the use of aminophylline intravenously, but no recorded instances are known of severe reactions to aminophylline other than vomiting, which is not uncommon when it is given by rectum in either suppository or liquid form.

When judged by the adult dose, which is usually given as from 0.25 to 0.50 gm., a dose of 0.25 gm. for a child of 3½ years is a large dose, and it is not impossible that, if the aminophylline were absorbed rapidly, untoward symptoms might result. It is possible that the severe reactions in both of these cases were caused by aminophylline. This is, however, not proved. Severe sensitivity to cocaine derivatives is not uncommon, and it could be that the trouble in these patients was due to benzocaine. An initial dose of one-half or two-thirds of a suppository is certainly safer, and probably sufficient, for a 3-year-old child. If the reactions in these patients were caused by aminophylline, they were probably due to drug toxicity; if caused by benzocaine, to allergy to the drug.

Answer.—It is highly doubtful that the reactions described by the inquirer were due to allergy. If it were an allergy it would be most likely due to the base in which the aminophylline is incorporated. In the first case described the symptoms are most suggestive of cardiac excitatory effects from the aminophylline. The second case apparently presented a picture of cerebral excitation. Death due to intravenously administered aminophylline has been described. Since rectal administration may also produce rapid absorption, the similar toxic effects are also possible. The inquirer's suggestion that "an initial dose of one-half a suppository would be safer" is a most practical one.

RELIABILITY OF THE HAEMOSCOPE

To the Editor:—*How reliable is the Haemoscope?*

E. D. Huntington, M.D., Chicago.

Answer.—The Haemoscope is an electric photometer for determining the number of cells suspended in solution by measuring the scattered light. The usefulness of this instrument is limited by the fact that the count is affected by the cell size and also by the cell shape. At present it is not known how serious this defect may be in evaluating red blood cell counts in pathological conditions. The most modern instrument compensates for variations in cell size over a limited range, i. e., from 7.2 to 8.8 μ average diameter. A comprehensive appraisal of the Haemoscope may be found in the *American Journal of Clinical Pathology* (23:731-745, 1953). An editorial in the same issue on page 800 also deals with this subject.

CORONARY DISEASE AND RESUSCITATORS

To the Editor:—*I encountered a case of recurrent coronary occlusion in a 65-year-old man, who was given oxygen by a Pulmotor apparatus for 10 minutes by a police emergency squad prior to the arrival of a physician. The patient died six minutes later. Autopsy showed there was good oxygenation but a tremendous over-insufflation of the lungs, which bulged well into the mediastinum. The heart showed coronary stenosis and an old myofibrosis. Has maladministration of oxygen by a Pulmotor with excessive oxygen tension been known to precipitate death?* *M.D., New York.*

Answer.—The use of resuscitators in cases of acute coronary occlusion has become rather common practice. It has been reported that older devices such as the one sold as the Pulmotor did develop pressures that were felt to be excessively high. The modern resuscitator automatically provides for inhalation and exhalation. The Council on Physical Medicine and Rehabilitation of the American Medical Association has established minimal requirements for the acceptance of resuscitators and inhalators. Such devices as accepted by this Council conform to these requirements. The positive pressure in such devices at the face mask may not exceed 20 mm. Hg and the negative pressure may not exceed 9 mm. Hg. It is doubtful that apparatus that conforms to the Council on Physical Medicine and Rehabilitation's minimal requirements when used properly could be a factor in precipitating death in the situation mentioned in the inquiry. Some modern resuscitators are built to provide active inspiratory and expiratory phases through the application of positive and negative pressures alternately. Other units provide an active inspiratory phase due to the positive pressure they develop, and passive expiration occurs at the end of the positive pressure phase.

USE OF TOWELS ON EDGES OF INCISIONS

To the Editor:—*Has any investigative work been done on use of skin towels on the edges of surgical incisions during surgical procedures? Some persons say that, when these towels become saturated with blood, they readily transmit organisms. Are there any references available to work that has been done to test this practice?*

John C. Meyers, M.D., San Francisco.

Answer.—The use of towels on the edges of surgical incisions is an apparently undocumented convention. Originally the towels were moistened with germicide and presumably contributed to asepsis (Von Bergmann, E.: *Jahrb. klin. Chir.* 1:147, 1889). The clinical observation of blood oozing through a towel fixed to the skin edge or bile staining the skin beneath such a towel suggests the bacteriological folly of using the conventional dry towel.

Pads made by interleaving a sheet of cellophane are used (Lahey, F. H.: *J. A. M. A.* 104:1990 [June 1] 1935) to protect the skin or to wall off the viscera. A bactericidal vinylite resin has been described that is applied in the operating room to form a film that adheres to the skin (De Bakey, M.; Giles, E. J., and Honold, E.: *Surg., Gynec., and Obst.* 74:499, 1942) and through which the incision is made. Studies showed that bacteria

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

were recoverable from the cut edge of the skin in 16.6%, the surfaces of the film remaining sterile. Sterile vinylite drapes are commercially available (Gerspacher, T. S.; Fowler, H. D., and Rolf, D. E.: *A. M. A. Arch. Ophth.* **45**:673 [June] 1951) with adhesive areas for attachment to the skin. Because the plastic films are impervious, use of these techniques is as logical a means for excluding the skin or isolating septic portions of a surgical procedure as use of rubber gloves.

PNEUMOTHORAX

To the Editor:—*What is the composition of the oil and wax formula used intrapleurally in cases of pneumothorax?*

M.D., Michigan.

Answer.—The most commonly used preparation for oleothorax therapy is mineral oil that contains 1 to 5% Gomenol (a partially volatile oil distilled from the leaves of a tree [Melaleuca viridiflora Brong. and Gris.] that grows in countries around the Indian Ocean). Other oils that have been used include paraffin oil, olive oil, and cottonseed oil, all of these with or without added Gomenol, 1 to 10%. A 2 to 10% solution of iodine in vegetable oil (Iodipin) was extensively used in Germany at one time. This form of therapy in the treatment of pulmonary tuberculosis has been practically abandoned in most institutions because of the high rate of complications and the advent of improved methods of treatment, including pulmonary resection.

ELECTIVE STERILIZATION OF WOMAN

To the Editor:—*The surgical staff at a hospital recognizes multiparity as an indication for elective sterilization if the woman is over 20 years of age and has at least four living children and if she and her husband request the procedure in writing. A sharp difference of opinion has arisen over the best procedure for sterilization. One group feels that a tubal ligation done a day or so after delivery is the only acceptable procedure. A second group practices salpingectomy rather than simple ligation because of the occasional failures encountered with any type of ligation. A third group has the patient return six or seven weeks after delivery for a total abdominal or vaginal hysterectomy. An opinion would be appreciated as to which of the three procedures outlined above should be used in good risk patients.*

M.D., New York.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—If the policy of the private hospital as reported here is not against the law of the state in which it exists, written consent of the husband and wife should be sufficient. The only question remaining to be explored is the type of procedure that it is best to employ. From the standpoint of permanence and simplicity, bilateral salpingectomy would appear the most reliable. There would seem to be no persuasive reason why hysterectomy should be resorted to. The possibility of predecease of the husband while the wife is still in the childbearing age must be considered. In that case, if the wife should remarry, her second husband might insist on her bearing his own children. Under such circumstances, a prior bilateral salpingectomy would be fatal to the hopes of this second marriage. With this contingency in mind, it might be wiser to have chosen a simple tubal ligation in the first place, since such a procedure usually establishes a situation that may be reversed if the circumstances require it.

Answer.—The simplest and safest procedure for sterilization after delivery is tubal ligation within 24 hours. This operation can easily be done under direct infiltration or intravenous anesthesia through a very small abdominal incision below the umbilicus. The Pomeroy procedure is the most certain method of tubal operation, because the incidence of failure is about one in 200 cases. This operation does not prolong the patient's hospital stay. In view of the excellent results of the Pomeroy method of sterilization and its simplicity and rapidity, there is no need to perform bilateral salpingectomy, which can be a bloody procedure immediately after delivery. Likewise, it is not justifiable to have a patient who has several children at home return for another hospital sojourn even for a simple procedure even if the expense is left out of consideration. The removal of a uterus abdominally or vaginally is a major procedure and carries some risk, although it is slight. Even if there were no risk of mortality or morbidity, a hysterectomy should not be carried out for the sole purpose of sterilization in a young woman. The only time a normal uterus may be removed for purposes of sterilization is at the time of cesarean section in a woman who has a large family and is near the end of her reproductive career.

ONE HIGHBALL AND DUODENAL ULCER

To the Editor:—*I am 50 years of age and for several years I have enjoyed a scotch and soda before dinner. For three weeks I had indefinite, vague, no-relation-to-meals gastrointestinal discomfort. A gastrointestinal series showed a definite small 2 mm. projection on the greater curvature of the duodenal cap, which the roentgenologist states is probably a small duodenal ulcer. Does the relaxation from one predinner drink overbalance the potential harm supposedly caused by alcohol?*

M.D., New York.

Answer.—A patient with an active duodenal ulcer should not have scotch and soda before dinner, or before a meal, regardless of the sense of well-being that is brought about. The stimulation of the parietal cells of the stomach by the alcohol would more than outweigh the sense of well-being that would result from the presumed "quieting down" of the emotional household.

AMAUROTIC IDIOCY

To the Editor:—*In the Queries and Minor Notes of* The Journal, *Oct. 31, 1953, page 894, is a question about the possibility of recurrence of amaurotic idiocy (Tay-Sachs disease) in future children of a couple who have already had one such child. The statement is made that "Little is known regarding the relative importance of the sperm and the egg in the transmission of human traits." Amaurotic idiocy is currently considered to be due to a recessive gene, and thus an affected person must receive this gene from both parents. The chances are one in four that any subsequent child of this couple will have amaurotic idiocy. If artificial insemination with a nonrelated Jewish donor is carried out, the chance for the infant having the disease is probably less than one in 500; if a non-Jewish donor is used, then the chance becomes exceedingly small.*

Ray C. Anderson, M.D.
University of Minnesota
The Dight Institute for
Human Genetics
Minneapolis 14.

To the Editor:—*Your consultant's answer to the query on infantile amaurotic idiocy* (J. A. M. A. **153**:894 [*Oct. 31*] *1953) deserves amplification. There is good evidence that this disease shows simple recessive inheritance (Slome, D.:* J. Genetics **27**:363, *1933). Since the family in question has had one affected child, both parents must carry the recessive gene and the chances of any subsequent child developing the disease are one in four. Furthermore, the diseased child must receive the pathological gene through both the egg and the sperm.*

With regard to the question of artificial insemination, if the disease frequency in Jews is of the order of 1 in 10,000 (probably an over-estimate), the risk that a child of this mother sired by a man unrelated to the parents would develop this disease is about 1 in 400. If the donor were non-Jewish, the risk would be appreciably lower than this.

F. Clarke Fraser, M.D.
Department of Genetics
McGill University
Montreal, Canada

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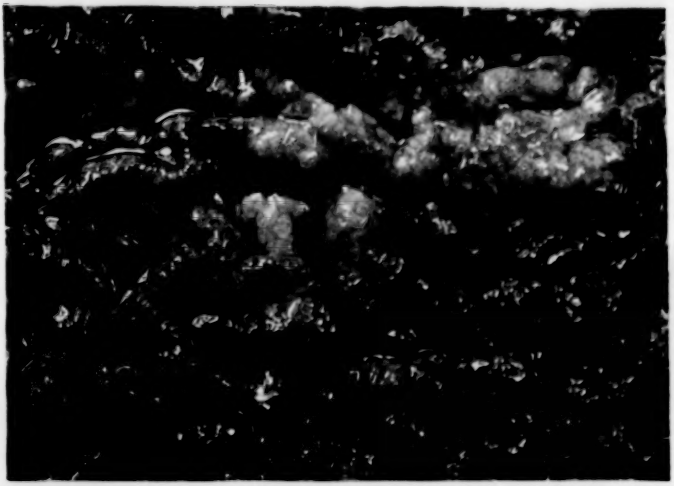

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*Asher, L. M.: The Use of Banthine in the Treatment of Digestive Disturbances, California Med. 76:137 (March) 1952.

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Doctors who prescribe Dietene 1000 Calorie Reducing Diets recognize their medical soundness. And the overweight cooperate eagerly. Here's why—

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See for yourself how helpful these diet sheets can be in your practice... and how cooperative obese patients can become. Mail the coupon for an initial supply of diets and a full quarter-pound of "Council-Accepted" Dietene.

***YOU* save valuable time for yourself and your office help...yet each diet looks individually prepared as though typed just for patients.**

***YOUR patients* enjoy the pleasure of selecting favorite foods without calorie counting or special meal planning. Dietene Diets are effective *because* they are simple.**

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THE DIETENE COMPANY DA 264
3017 Fourth Ave. South, Minneapolis 8, Minn.
I would like to examine the Dietene Reducing Regime. Please send diet sheets and a quarter-pound sample of Dietene.

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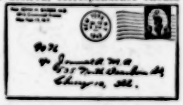

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Journal A.M.A., 535 N. Dearborn St., Chicago 10

NOTICE

ELECTROCARDIOGRAPH INTERPRETATIONS—FOR doctor, clinic and hospital; by certified internist; send tracings unmounted; interpretations by return airmail anywhere; reasonable rates. Box 5767 % AMA.

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ASSOCIATE—THREE MAN GROUP; CENTRAL CALIfornia; general practice; post graduate training required; under 40; hard worker; references. $5,000 or percentage to be arranged; full details 1st letter. Box 5819 B, % AMA.

PHYSICIANS WANTED

GENERAL PRACTITIONER—AGE 35 OR LESS; TO join established, growing clinic and to assist in surgery; excellent opportunity in all branches of medicine; salary commensurate with training and adaptability; modern hospital facilities and appointments available; 45 miles southwest of Chicago; interview required. Write or phone: M. R. Saxon, MD, % Saxon Clinic, Oswego, Illinois. Phone 4-6851. C

WANTED—PSYCHIATRIST; CITY OF MILWAUKEE Health Department; experience in child guidance to direct health department mental health program; civil service appointment, pension, sick leave, vacation; salary $9472 to $10,904. Apply to: Dr. E. A. Krumbiegel, Commissioner of Health, 200 E. Wells Street, Milwaukee 2, Wisconsin. C

DOCTOR, URGENTLY NEEDED—CRANE, INDIANA; population 2000; new medical building; basic equipment furnished; new housing near completion for 200 additional families; no doctor practising here; wonderful opportunity. Box 6171 C, % AMA.

GENERAL PRACTITIONER — DRAFT EXEMPT; AS 2 year replacement while I am in service; very lucrative practice in Missouri town of 1300; wanted by August 1, 1954; will consider partnership arrangement. Box 6183 C, % AMA.

(Continued on page 58)

Clinical control of orthostatic hypotension with Spencer....*

One of the findings in studies* covering a 6 month to 3 year follow-up on 173 patients who had sympathectomies to include the 4th thoracic level indicate that the control of the orthostatic hypotension which results "routinely requires a special corset (Spencer Support) with a spring suprapubic pad (Spencer Abdominal Spring Pad**) . . . "

The Spencer Supports and Abdominal Spring Pad used in these —and in present—studies are pictured above. These supports improve and maintain posture and body mechanics and the Abdominal Spring Pad serves as a *resilient visceral elevator*. Together they help prevent the excess pooling of blood in the abdominal viscera. The *comfortable* support to spine and abdomen produces a heightened sense of well-being, and confidence in getting back to normal living.

Inset: The Spencer Abdominal Spring Pad. In the woman's support, shown open, note the placement of the Pad in the support.

These benefits are obtained because these Spencer Supports—like all other Spencers—*are individually designed, cut, and made* for each patient to attain the prescribed medical aims. Use Spencer Supports with confidence in control of hypotension associated with any conditions where support is indicated.

MAIL coupon below—or PHONE a dealer in Spencer Supports (see "Spencer Corsetiere," "Spencer Support Shop," or Classified Section) for information.

* Evans, James A., Bartels, Carl C., *Results of High Dorsolumbar Sympathectomy for Hypertension*, Annals of Internal Medicine 30: 307-329 (February) 1949.
** Patented

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individually designed supports

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137 Derby Ave., New Haven 7, Conn.
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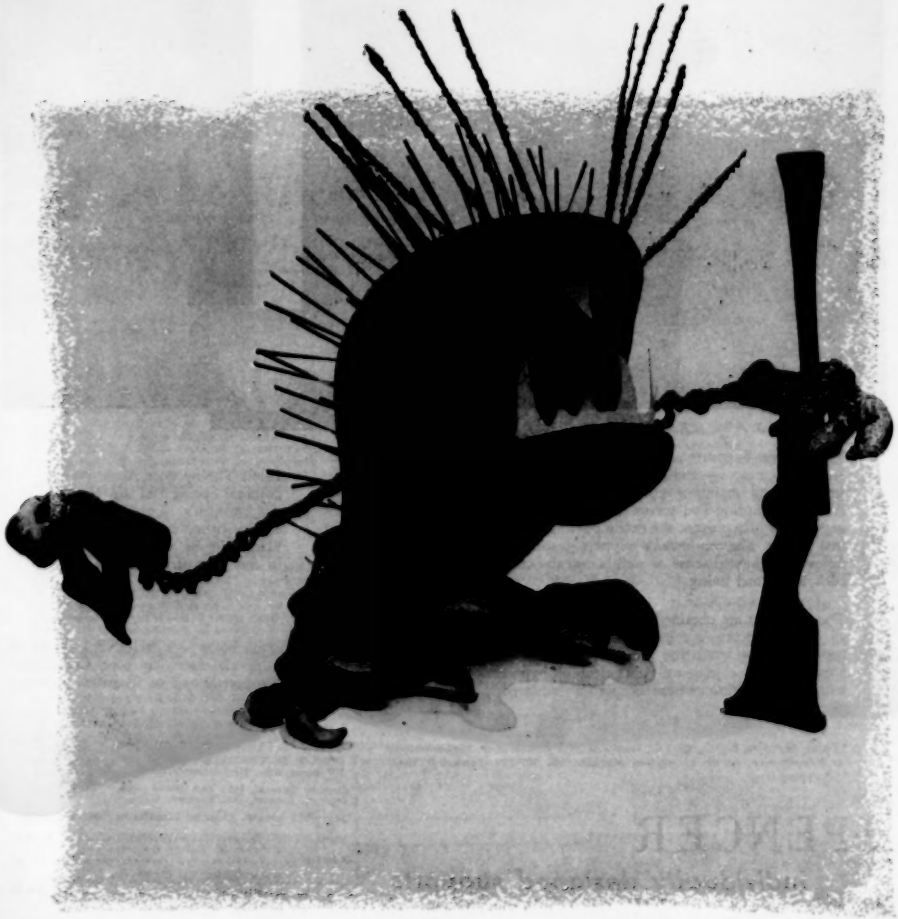
When patients are sensitive to antibiotics



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always consider ERYTHROCIN*

A SELECTIVE ANTIBIOTIC

ORALLY EFFECTIVE

against staphylococci, streptococci and pneumococci—especially indicated when patients are allergic to other antibiotics or when the organism is resistant.

A DRUG OF CHOICE

against staphylococci—because of the high incidence of staphylococci resistant to other antibiotics.

A DRUG OF CHOICE

because it is less likely to alter normal intestinal flora than most other oral antibiotics; gastrointestinal disturbances rare; no serious side effects reported.

USE ERYTHROCIN

in pharyngitis, tonsillitis, otitis media, sinusitis, bronchitis, scarlet fever, pneumonia, erysipelas, pyoderma and certain cases of osteomyelitis.

DOSAGE

average adult dose is two 100-mg. tablets every four to six hours. Specially-coated ERYTHROCIN tablets are available in bottles of 25 and 100. Abbott

*Trade Mark ERYTHROMYCIN, ABBOTT CRYSTALLINE

1-53-54

Arm & Hammer and Cow Brand Bicarbonate of Soda are U.S.P. remedies

For over 50 years

physicians continue

to recommend Baking Soda

with confidence

It's economical . . . It's available everywhere . . . It's convenient to use

Church & Dwight Co., Inc.

70 Pine Street • New York 5, N.Y.

BUSINESS ESTABLISHED IN 1846

TONICS AND SEDATIVES

♣

my favorite story

Every week in this space will be published two humorous or human interest anecdotes submitted by physicians concerning their practice in particular or people in general. As the title implies, it is the doctor's favorite story—the one that gave him the biggest chuckle or caused a serious moment of reflection. Your contributions for "My Favorite Story" are most welcome.

♣

Last summer a Midwestern doctor was spending his vacation in New Hampshire. His hobby was collecting antiques. One day, while passing by a shabby roadstand where baskets and pottery were sold, he noticed a puppy lapping up water from a saucer. Suddenly he realized that the saucer was an extremely valuable piece of pottery.

He walked over to the stand and said to the proprietor, "I will give you $5 for the puppy." The answer was no. The doctor persisted. "The puppy is extremely dirty and undesirable, but it happens to be a hobby of mine to buy puppies. I will raise my offer to $10."

"It's a deal," said the owner pocketing the $10. Then the doctor said, "Since the puppy seems so happy drinking from that saucer, I am sure you won't mind throwing it in on the deal."

"Nothing doing," said the owner. "That's my lucky saucer. With that saucer I have sold 34 puppies this week."

♣

Grandma was a diabetic with very little will power who was always sneaking a piece of candy without the family's knowledge and, as a result, the doctor prescribed frequent visits to the hospital where he could keep her under control.

She was greatly attached to her granddaughter, age seven. One time all the general rooms were filled and it was necessary to place Grandma in a private room in the *maternity* ward. Her little granddaughter came to visit her but, curious as all children are, began wandering around the ward corridor.

An adult visitor asked her what she was doing. "Visiting Grandma," was the reply. "Grandma!" asked the startled visitor.

"Oh, yes," said the child nonchalantly. "Grandma has been cheating again."

♣

did you know that . . . ?

No doubt the strangest passage Aretaeus, a Greek physician of a Roman province in Asia Minor, ever wrote was this fantastic account of the uterus:

"In the middle of the flanks of women lies the womb, a female viscus, closely resembling an animal, for it is moved of itself hither and thither in the flanks, also upwards in a direct line to below the cartilage of the thorax; and also obliquely to the right or the left either to the liver or spleen; and it likewise is subject to prolapsus downwards, and in a word, is altogether erratic. It delights in fragrant smells, and advances towards them; and, it has an

(Continued on page 54)

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A wide variety for you to recommend: Meat and Vegetable Soups, Vegetables, Fruits, Desserts, *Cooked* Cereal Food, *Cooked* Oatmeal, *Cooked* Barley, *Cooked* Corn Cereal.

Finer flavor means happy mealtimes... good nutrition

When Baby eats with eager relish, he thrives *emotionally* as well as physically. Happy mealtimes have a beneficial influence on his whole personality development.

This is why *flavor* is all-important to us at Beech-Nut. We use the very choicest fruits and vegetables, plump chickens and carefully selected lean meats. All are scientifically processed to retain their tempting flavor, attractive color and natural food values in high degree.

The finer flavor, wide variety of Beech-Nut Baby Foods will help your young patients get a good start nutritionally and emotionally.

All Beech-Nut standards of production and advertising have been accepted by the Council on Foods and Nutrition of the American Medical Association.

BEECH-NUT FOODS FOR BABIES

CARRIED AROUND THE WORLD

DOCTORS in every part of the globe depend on TYCOS* blood pressure instruments. Here is the Pocket Aneroid that is accurate in any position—and it will stay that way unless it is misused. Weighing only 25 ozs., the TYCOS Sphygmomanometer fits in a small case that can be slipped into the pocket. Exclusive hook cuff fits any adult arm — slips on and off easily. It's dependable . . . you know it's accurate as long as the pointer returns to zero . . . a simple visual check. You can see this instrument at your favorite surgical supply dealer.

HERE'S ANOTHER MEMBER OF THE TAYLOR FAMILY

The new TYCOS Desk Aneroid combines Taylor accuracy with modern design. The 3⅜" ivory-tinted dial is easy to read, and the easel adjusts to any desired angle. Long pointer magnifies variations, gives maximum sensitivity. Wall model also available. Made by Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

*Reg. U.S. Pat. Off.

Taylor Instruments MEAN ACCURACY FIRST

aversion to fetid smells, and flees from them: and, on the whole the womb is like an animal within an animal."

♣

the poetry corner

"THE BACTERIOLOGICAL BALL"

A gay bacillus to gain her glory
Once gave a ball in a laboratory.
The fete took place on a cover glass
Where vulgar germs could not harass,
None but the cultured were invited
For Microbe Chicks are well united.
They closely shut the ballroom doors
To all the germs containing spores.
The Staphylococci first arrived
To stand in groups they all contrived.
The Diplococci came in view
A trifle late and two by two.
The Streptococci took great pains
To seat themselves in graceful chains.
The Pneumococci stern and haughty
Declared the Gonococci naughty
And said they would not come at all
If the Gonnas were present at the ball.
The fete began, the mirth ran high
With not a fear of danger nigh.
Each germ enjoyed himself that night
Without a fear of phagocyte.
'Twas getting late and some were loaded
When bang! the formaldehyde exploded;
And drenched the happy dancing mass
That swarmed the fated cover glass.
Not one survived, but perished all
At that Bacteriological Ball.

♣

medical maladies—

Here are some more contributions by physicians to the zany parlor game we described in the last issue. In case you missed the instructions, the game goes something like this: The lyrics of any popular song are analyzed and then each doctor gives his diagnosis of the symptoms described.

♣

SYMPTOMS OR LYRICS OF SONG

"Dinah is there anyone finer
In the State of Carolina if there is and
You know her, show her to me
Dinah with her Dixie eyes blazing—"

DOCTOR'S DIAGNOSIS

Dinah seems to be suffering from a bad goitre with exophthalmos and must be running a basal metabolism of at least 50 plus. Can't really blame him for looking for someone else. More than likely Dinah is hell to look at and worse to live with.

SYMPTOMS OR LYRICS OF SONG

"You go to my head
And you linger like a haunting refrain
And I find you spinning around in my brain
Like the bubbles in a glass of champagne."

DOCTOR'S DIAGNOSIS

Obviously a severe case of migraine. Would suggest an allergic work-up and X-ray of the sinuses. If there still is no re-

(Continued on page 56)

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Folic Acid

Folic Acid is essential in the formation of mature red blood cells.

Folic Acid plays a major role in normal cellular growth.

Folic Acid is of proven value in many forms of malnutrition.

Folic Acid is a specific therapeutic for a number of macrocytic anemias.

Folic Acid is particularly important in infancy and pregnancy.

Essential for cellular nutrition and growth

Folic Acid is available from leading pharmaceutical manufacturers in the form of tablets, elixirs and parenteral solutions. This advertisement is presented on their behalf by

Pharmaceutical Department

Fine Chemicals Division, AMERICAN Cyanamid COMPANY, 30 Rockefeller Plaza, New York 20, N. Y.

FOR
Safety-First Effectiveness
an
ANTIHISTAMINE
of CHOICE is
C. T.
PARAMINYL
MALEATE
(BUFFINGTON'S)
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Pyrilamine maleate

INDICATIONS
Hay fever, urticaria, vaso-motor rhinitis and many allergic drug reactions. Symptomatic relief is promptly effected and well within clinical limits of safety.*

50 Milligram Tablets
Available at
Prescription
Pharmacies

**Write for bibliography and professional samples.*

BUFFINGTON'S, INC.
Worcester, Mass. U.S.A.

TONICS AND SEDATIVES *(Continued)*

lief, an atomizer at night is indicated. If symptoms still persist, would suggest a change in climate. He'd probably go to another doctor, anyway.

SYMPTOMS OR LYRICS OF SONG

"I left my heart at the Stage Door Canteen
I left it there with a girl named Eileen
A soldier boy without a heart
Has two strikes on him from the start."

DOCTOR'S DIAGNOSIS

Who is the Eileen? An FACP? A Fellow in Cardiology? Or just a gal he picked up? As far as the soldier is concerned, he'll never pass an overseas physical, no matter how fast the line moves, and if they ever pick it up, there's a good possibility for a CDD.

♣

The doctor was strolling down the main street of town with his wife when a blonde with a vivid red dress called out gaily, "Why, hello there."

The physician nodded stiffly and walked on. His spouse eyed him narrowly. "And just where," she demanded, "did you meet that person, my dear?"

"Oh," said the doctor, "That was just a young woman I met professionally." His wife's icy reply was, "Her's or yours?"

♣

During a recent examination in anatomy the following question was asked: "What is the function of the seminal vesicles?"

Without batting an eyelid one student in perfect seriousness wrote the following highly original answer: "The function of the seminal vesicles is to store semen in case of emergency."

♣

A New York "wolf" was in a hotel lobby one day and noticed a beautiful girl sitting by herself. With supreme self-confidence, he registered "Mr. So-and-so and wife," and then strolled across the lobby to make her acquaintance.

Three days later he was handed a bill for six hundred dollars. "What's the idea?" he sputtered. "I've only been here three days."

"That's right," said the clerk, "but your wife has been here for a month and a half."

—D. D.

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Do you lecture at schools, meetings, or teach physicians, nurses or patients? From our huge store of visual aids covering most subjects we can help you select those visual aids best suited to meet your special requirements.

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WRITE US your teaching problems. Our selection will help you achieve a solution. Visual Aids Catalog J-153 on request.

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American Medical Association, 535 N. Dearborn St., Chicago 10

"I don't think it does me justice . . . Do you?"

V 154
1954

2 two marks of distinction

...the seal of the Council...

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY

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Prescribe Pharmaceuticals that offer assurance of quality and value.

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AMINOPHYLLINE SUPPOSITORIES, 0.5 gm.
Box of 12 ..... $ .96

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1½ gr.—Bottle of 100 ..... $ .60
3 gr.—Bottle of 100 ..... .88

AMINOPHYLLINE ENERELS, (Enteric Coated)
1½ gr.—Bottle of 100 ..... $ .92
3 gr.—Bottle of 100 ..... 1.08

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ASCORBIC ACID TABLETS, C. T., VITAMIN "C"
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50 MU—Bottle of 100 ..... $2.40
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SOLUBLE PENICILLIN TABLETS, NEBUTABS PREMO
50 MU—Bottles of 24 ..... $ .84
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5 Vials ..... for $4.40
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PENICILLIN G POTASSIUM, CRYSTALLINE VIALS
500 MU—5 Vials to carton ..... $ .24 ea.
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South Hackensack, N. J.

Gentlemen:

Please send me your new Premo catalog.

Name .....

Address .....

City ..... **State** .....

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These observations by Drs. L. S. Nelson and A. V. Stoesser are reported in "Cleansing Agents — Irritating and Non-Irritating to the Skin", published in the September-October 1953 issue of Annals of Allergy.

***Prescribe* LOWILA Cake as a skin cleanser in allergic or dermatitic conditions when soap irritates.**

LOWILA Cake contains NO alkali — NO fatty acids — and NO perfumes.

LOWILA Cake maintains the normal "acid mantle" of the skin at pH 4.5-5.5.

LOWILA Cake is the only lathering soapless skin cleanser in cake form.

Reprints and samples on request.

Westwood Pharmaceuticals • 468 Dewitt Street, Buffalo 13, N.Y.
DIVISION OF FOSTER-MILBURN CO.

(Continued from page 48)

NEUROPATHOLOGIST — NEW POSITION; LARGE county hospital • American citizenship required; salary $10,774 (after 1 year, $11,774) if Diplomate Board; $7,280 if Board eligible; opportunity research, affiliation medical school; supply details training, publications, military, references. Box 6175 C, % AMA.

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GENERAL PRACTICE: (a) Grp being founded by surg, long-estab'd; new clinic bldg; short distance from San Francisco. (b) GP able do minor surg; ass'n; small grp limiting pract to internal med; ten 50,000 near Los Angeles. (c) GP inter'd physical med; rehabilitation grp; near sev medical schools. (d) GP; ass'n with distinguished 9 man grp, long-estab'd; Ige city; univ med center; Pac NW. (e) GP; ass'n; new grp being founded by Board specialist & prof, univ med school; So.Calif. (f) GP; grp-ass'n; busy priv gen'l & surg pract; nr Los Angeles. (g) GP inter'd medicine; Sacramento area. (h) GP; ass'n; gen'l & surg pract; San Diego.

SIMILAR OPPORTUNITIES IN EVERY SPECIALTY
Please send for an Analysis Form so we may prepare an individual survey for you
NO REGISTRATION FEE—STRICTLY CONFIDENTIAL

FELLOWSHIP IN DOMICILIARY MEDICINE—ONE year beginning July 1, 1954; Board accredited; clinic and home service; salary $2400 plus mileage allowance; automobile required. Joseph Rosenthal, MD, Boston Dispensary, (unit of New England Medical Center) 25 Bennet Street, Boston 11, Massachusetts. C

WANTED — GENERAL PRACTITIONERS; TO JOIN established medical group; full partnership status after probationary period; annual vacation plus annual postgraduate study paid; minimum pay $12,000 net; more for experience and training. Write: Community Health Center, Box 344, Roscellon, Pennsylvania. C

GENERAL PRACTITIONER — CAPABLE OF DOING light surgery; small group; starting salary $850 monthly; excellent working conditions. Post Office Box 2132, Inglewood, California. C

POSITION VACANCY—ROCKFORD, ILLINOIS; PSYchiatric director of mental health clinic; all age level therapy program; experience with children necessary; dynamic orientation; salary up to $12,000 and opportunity for private practice. Clinic Committee, 2410 North Main Street, Rockford, Illinois. C

FELLOW IN FORENSIC PATHOLOGY—FULLY APproved; complete facilities for training in pathology, toxicology and administrative legal medicine; remuneration commensurate with training and experience. Reply: Department of Legal Medicine, Medical College of Virginia,* † Richmond, Virginia. C

WANTED—RADIOLOGIST; BOARD CERTIFIED OR eligible; for a 14 man group; in a mid-western city of 100,000. Box 6187 C, % AMA.

GENERAL PRACTITIONER—RICH FARMING AREA central Illinois; open staff hospitals nearby; excellent living and income; small down payment assures very beautiful modern office; will introduce; immediate. Box 6191 C, % AMA.

OBSTETRICS-PEDIATRICS—YOUNG MAN; INTERested in obstetrics and pediatrics; associate with Board certified obstetrician and gynecologist; help with obstetrics; handle all pediatrics; Mid-West, 120,000; need not be Board qualified; office, salary available. Box 6205 C, % AMA.

WANTED—BOARD ELIGIBLE PSYCHIATRIST; ONE year training or experience in child guidance; salary according to qualifications. Apply: Mr. Theodore Rousseau, Chairman, Citizens' Advisory Committee, Oneida County Child Guidance Center, 1598 Whitesboro St., Utica, New York. C

WANTED — WELL-TRAINED UROLOGICAL RESIdent; unmarried; Board eligible preferred; to take over New England practice of Diplomate, with possibility of subsequent association. Box 6193 C, % AMA.

Founders of the counseling service to the medical profession, serving medicine with distinction over half a century.

ACADEMIC: (d) Faculty appointment; dept pediatrics; rank depending qual; important med school; E.
ADMINISTRATION: (b) Med dir; vol gen'l hosp, 350 beds; Ige winter, summer resort city; South.
ALLERGY: (a) Impart diagnostic clinic group; 90 men; subsidized's teaching program; Ige city.
ANESTHESIOLOGY: (d) Assn w/anes., Dipl; active priv pract & chief, 230 bed hosp; S-Atlantic State. (e) Dir dept; gen hosp 250 beds; E.
ASSISTANTS: (a) By long-estab GP; duties GP, Ob & ped; $10-$12,000; partner 1 yr; mild warm climate; SE. (c) By elderly GP; gen'l & surgical work; $12,000; Calif. (g) By surg; duties GP & surg; indus city 300,000; MW. (q) Texas; $12,000; GP; surg.
DERMATOLOGY: (k) Ass'n w/derm, age 45; busy pract town 100,000; foreign graduates accepted.
EENT: (a) Oph; assn with oph, Dipl & head dept, oph; grp 32 distinguished men; about $15,000 plus priv pract of surg; univ town 75,000; MW. (b) Oto; Dipl; ass'n; grp being founded; $10-$20,000; Neb. (c) Oto; Head dept; 10 man group; own hosp; SW.
GENERAL PRACTICE: (p) GP, 28-45; able do minor surg; grp assn; town 50,000; so.Calif. (q) Grp-assn req's GP able do surg; sal or %; attrac town; new 125 bed hosp; MW. (r) GP with several yrs surg exp capable major surg; as house surg, 50 bed R.R. hosp; E. (s) GP inter'd physical med; impor rehabilitation center; nr univ med school; about $8500; West Coast.
GERIATRICS: (f) Head dept; group distinguished men; own foundation hosp; $12-$18,000; S.
HOUSE PHYSICIAN: (a) Cover emergency room, 150 bed hosp; 11 man grp; min guar $10,000; SW.
INDUSTRIAL MEDICINE: (a) Ass'n; one of country's finest indus med depts; major indus; univ city 500,000; Mid. (e) Staff; indus; permanent; S.C.
INTERNAL MEDICINE: (g) Assn, clinic grp, 14 specialists; mostly certified; req's one with inclusive exp; sal plus %; early partner; (h) Head dept; pref one qual G-E; group long-estab'd; own hosp; SW. (i) Assn, group 3 Bd men, 5 Bd elig; 15,000 short distance from univ center; apply nothing $18-$25,000 after becoming estab'd. (j) Ass'n; med facility paper company; to $15,000; (k) One well-trn'd, cardiology; ass'n; grp 3 Board men, well-estab'd; town 300,000; S.
NEUROSURGEON: (f) Ass'n with Board neurosurg; very active priv pract univ city 300,000; MidE.
OBSTETRICS-GYNECOLOGY: (k) Assn w Board OB-GYN, Dipl FACS & head dept, OB-GYN, 500 bed hosp; univ city, 150,000. (l) Head dept; excel group; $18,000; SE. (m) Assn; ips grp; ext facilities; $12,000 rising to $18,000; Calif.
ORTHOPEDICS: (k) Head dept; important grp; own 100 bed hosp; $15-$18,000; supply outside surg; S. (l) Assn with Board orthe heading own orthe clinic; $12-$18,000; univ town 100,000; SW.
PATHOLOGY: (a) Dir dept; 350 bed hosp; large city; exc med school; E. (f) Head dept; several hosps; should net min $25,000; Pa. (u) Dir dept; new 200 bed hosp; Ohio.
PEDIATRICS: (a) Head dept, well-estab group; lake region, N.Y.; $12,000. (b) Dipl; hd dept, new group being founded by own long-estab; $15-$20,000. (c) Head dept; grp staffed by 3 Dipls, 3 Bd elig; short distance from univ center; appor netting $15-$20,000 after becoming estab'd; MW.
PHYSICAL MEDICINE: (d) Diplomate, physical med; to dir noted rehabilitation center; West.
PSYCHIATRY & NEUROLOGY: (a) Dir; child guidance center; req's Board elig man with 1 yr trn'g or exp in child guidance; good sal plus priv pract; coll town 125,000; E.
RADIOLOGY: (f) Assn; grp estab'd over 30 yrs now reorganizing; 50 rooms; outstanding facilities; estab'g branches nearby towns; med sch city; W. (g) Dir dept; 500 bed hosp; med sch affil'd. (h) Ass't to Bd rad, 500 bed hosp; $12-$14,000.
SURGERY: (a) Assn, 6 distinguished men; town 20,000; Calif. (e) Gen'l surg; grp assn; town 10,000; new 125 bed hosp; $12,000 guar; MW. (p) Gen'l surg with 2 yrs trn'g; assn; 4 man grp; assist chief & succeed short time; minimum $12,000; sal or %; Iowa.

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We offer you our best endeavors—our integrity—our 37 year record of effective placement achievement
STRICTLY CONFIDENTIAL

(Continued on page 60)

V 15
1954

PHOTOGRAPH BY PAUL RADKAI

Smooth course after bowel surgery . . .

SULFASUXIDINE®

SUCCINYLSULFATHIAZOLE

ACTIONS AND USES: Before and after surgery of the bowel SULFASUXIDINE provides:

Greater operative safety. Intestinal coliforms are reduced 95 to 99.9 per cent[1]; the colon is "empty and odorless" at operation,[2] and the chances of local infection are minimized.[3]

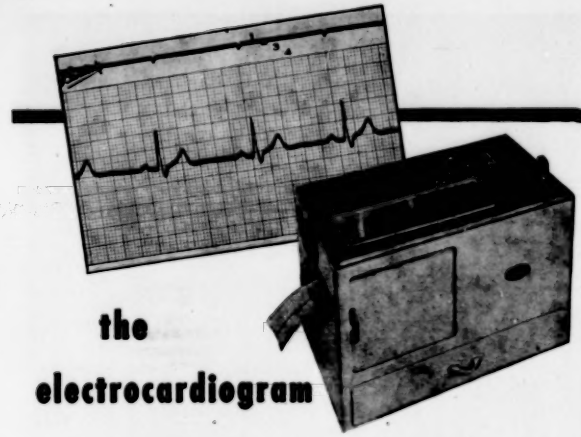
Smoother and faster recovery. Postoperative peritoneal reactions are reduced[4]; there is less edema and inflammation around the operative wound.[5] Toxic reactions are rare.[6]

SULFASUXIDINE is also a valuable therapeutic agent in acute and chronic ulcerative colitis.[6] It is also effective in ulcerative colitis following acute dysentery and for the prevention of the carrier state in infections with resistant Sonne strains.[5] Because action is largely local, prolonged use is relatively safe.

DOSAGE: 0.25 Gm. per kg. body weight per day.

SUPPLIED: Tablets 0.5 Gm. in bottles of 100, 500 and 1,000; Powder in ¼-lb. and 1-lb. bottles.

References: 1. M. Clin. North America 27:189, 1943; **2.** Rev. Gastroenterology 15:151, 1948; **3.** Surgery 18:200, 1945; **4.** Postgrad. Med. 10:403, 1951; **5.** South. M. J. 41:672, 1948; **6.** N. N. R. 1952, p. 91.



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"The final authority" in cardiac arrhythmias* is essential in distinguishing the three most common forms of arrhythmia: sinus arrhythmia, premature systoles and auricular fibrillation.

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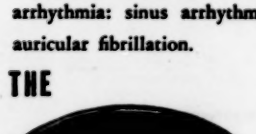

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*The Med. Clin. of North American (Jan.) 1952, p. 93.

THE BURDICK CORPORATION
MILTON, WISCONSIN

(Continued from page 58)

WANTED — RADIOLOGIC ASSOCIATE; BY LONG-established Illinois radiologist with modern private office and 2 hospital appointments; unusual opportunity; state age, health, training, experience, compensation expected 1st year. Box 6206 C, % AMA.

UNUSUAL OPPORTUNITY—FOR GENERAL PRACTITIONER with some surgical training; New England town; modern hospital; excellent hunting and fishing; $40,000 gross; will donate practice and introduce, to purchaser of modern 9 room house and 3 room office; equipment optional; leaving to specialize. Box 6132 C, % AMA.

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PACIFIC COAST
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LICENSED PHYSICIAN—FOR SMALL SELECT BOYS camp in Maine; for 8 weeks beginning July 1st; excellent recreational facilities; nurse assists; salary for 8 weeks is $500 plus maintenance. Box 6205 C, % AMA.

WANTED — PHYSICIAN; $20,000 GENERAL PRACTice; Illinois; town 4000 with open hospital; to take over practice while I take residency, or will sell outright for $5000; home available; salary, percentage. Box 6201 C, % AMA.

PHYSICIANS WANTED—SPECIALISTS AND GENeral practitioners needed in industrial suburb of Houston, Texas; new professional building being completed. For further information write: Box # 429, Pasadena, Texas. C

GENERAL PRACTITIONER—DESIRES ASSOCIATE; to take over busy practice in very near future; adequate hospital facilities; northern Michigan; excellent fishing and other recreation nearby. Box 6206 C, % AMA.

WANTED—INTERNIST; BY CLINIC GROUP IN MIDwestern university city of 100,000; desires well-qualified internist in rapidly expanding, well-established 14 man group; each man certified by specialty Board; starting salary substantial; partnership with participation after 1 year. Box 6140 C, % AMA.

ASSISTANT RADIOLOGIST—BOARD MEMBER OR Board eligible; as associate in 400 bed approved hospital affiliated with medical school; opportunity for man interested in teaching and research. Box 6199 C, % AMA.

GENERAL PRACTITIONER — WITH CLINICAL group; occasionally to relieve obstetrician; mid-western college town; prosperous agricultural center; family type community with many cultural advantages; salary or percentage optional. Box 5997 C, % AMA.

FELLOWSHIP IN GERONTOLOGY—AVAILABLE JULY 1, 1954; in the Division of Gerontology, Washington University School of Medicine, St. Louis, Missouri; salary, $166 per month. Address replies to: 5600 Arsenal St., St. Louis 9. C

THE JACKSON CLINIC DESIRES THE SERVICES OF an otorhinolaryngologist, internist and proctologist; Board men are preferred. Doctor Arnold S. Jackson, Jackson Clinic, Madison, Wisconsin. C

WANTED — DIPLOMATE OR BOARD ELIGIBLE neuro-surgeon; to assist Board neuro-surgeon in practice, clinics, teaching program medical school; salary commensurate with ability. Box 6109 C, % AMA.

WANTED — INTERNIST; AS ASSISTANT; BOARD certified or eligible; not over 40 years; allergy training desirable; state experience, salary expected, draft status; active office and hospital practice. Box 6103 C, % AMA.

WANTED—RADIOLOGIST; HOSPITAL IN WEST VIRginia; 200 beds; salary $20,000 net, annually. Box 6091 C, % AMA.

OBSTETRICIAN-GYNECOLOGIST WANTED — FOR association with 12 man clinic group in south central Illinois; salary $12000 to $14000 depending upon qualifications; partnership after 1st year. Box 5982 C % AMA

WANTED — ACCREDITED RADIOLOGIST; FULL time clinic; Middle Atlantic states; annual income $117,000, give complete details in 1st communication. Box 6065 C, % AMA.

SHAY MEDICAL AGENCY
55 E. Washington Street
Chicago 2, Illinois

ANESTHESIOLOGIST: assoc. w/member of Am. Bd. of Anes.; city of 14,000 in Maryland; priv. pract.

ASSISTANT: gen. w/lge. pract. in OB & ped; $9000 plus % w/full privileges in yr.; M.G.

DERMATOLOGIST: lge. ind. grp.; sal. & commission w/opping. of prtnrshp. in 2 yrs.

DIRECTOR: for org. serving 35,000 people in Pac. NW; background in educ. of hlth. program essential; size & complexity of their operation demands person w/ broad executive exper. in hlp. program; salary prob. not less than $15,000 yrly w/appropriate vacation & other conditions; permanent.

ENT: (a) genl. location for Bd'd man who loves to hunt & fish & enjoys informal living; class A hosp. in town; opptny. to make $15,000 or more. (b) full prtnrshp. w/man est. 40 yrs; Indiana.

GENERAL: yng. industrious doc. to share lucrative pract. in sm. Texas town w/lge. trade territory & in prosperous irrigated land area; prtnrshp. or % w/idea of taking over in few yrs.; well-equip. clinic & hosp.

HOUSE SURGEON: 50 bed hosp; M.G.; $6-$8000 w/ chance of becoming chief of staff at $10-$12,000.

INSURANCE: if you want to make your career in this field, we have something unusual to tell you about; one of the biggest companies needs an asst. med. dir.; salary $6-$10,000; new bldg.; working conditions "out of this world."

INTERNIST: 6 man grp; Illinois; $850 start w/future prtnrshp.; pleasant working conditions.

MEDICAL NEUROLOGIST: assn. w/2 qual. men; MW city of 200,000; sal. opp.

OBSTETRICS-GYNECOLOGY: (a) w/20 extremely well qual. men; North Dakota city of 25,000; $15,000; (b) 9 man distinguished grp.; Calif.; liberal salary, prtnrshp. after trial.

OPHTHALMOLOGIST: grp; Mont; $10-$14,000 for 1st 3 yrs. w/opptny. of prtnrshp. at end of 3rd year.

ORTHOPEDIC SURGEON: (a) assoc. to $100,000 a yr. pract.; sal. to start w/prtnrshp. in 6-12 mos.; excel. opptny. for man to work into very lge. & rapidly growing pract. in rapidly growing section of Texas. (b) w/5 man grp.; limiting to indus. & ortho. work; deep South; $700-$1000 to start w/future prtnrshp. on % basis.

PATHOLOGIST: to be chief of dept; 340 bed fully approv. hosp; Penna; financial open; part of expenses will be paid for interview.

PEDIATRICIAN: 13 man grp.; ind.; $1500 mo. start.

PHYSIATRIST: for 7 hospitals enjoying enviable reputation in pleasant Wisc. community; $15,000, can be more.

PRINCIPAL THORACIC SURGEON: $10,138 to start; hosp; fully furnished staff hse. avail. at moderate rental; food avail. at hosp. cost; good working relationship w/med. schl.; East.

PSYCHIATRY: (a) asst. med. dir.; $7500 bed hosp; MW; to $11,000 plus ret., insiud. utilities. (b) $6-$8000 w/mbr. for single person; yo. modern hosp. w/latest facil.; close to eastern med. center.

RADIOLOGIST: to head dept. of 100 bed genl. hosp. now adding 50 more beds; financial arrangements open; summer vacationland area of Wisc.

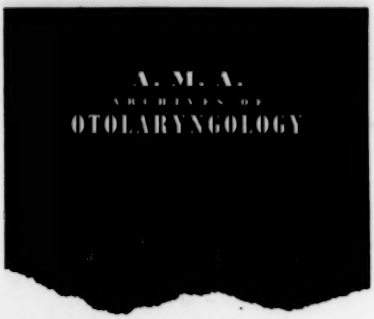
RESIDENT PHYSICIAN who has had some surg. trng.; Penna. license req.; open March 1st; $400 a mo. & mtn. plus % of surgical fees collected; new priv. 50 bed genl. hosp; only man in 30 mile radius.

SURGEON: assist; yng. man w/min. of 4 yrs. trng. who needs 1-2 more yrs. to be elig. A.B. exams; $5-$10,000 depending on qualifications; deep South.

TUBERCULOSIS: medical director & superintendent; open June 1st; $8-$10,000 plus furnished home, food and laundry; must be qual. to read X-rays & perform pneumoperitoneum.

UROLOGIST: (a) assn. w/2 man; Florida; sal. 1st yr, sal. & % thereafter leading to prtnrshp. (b) assoc. for clinic now prtnrshp of 2; must be well-qual. w/ top trng., int. in urologic resrch. & teaching; $8000 1st yr.; $9000 2nd yr.; $10,000 3d yr.; then opptny. of sharing 3d interest in prtnrshp; deep South.

(Continued on page 62)



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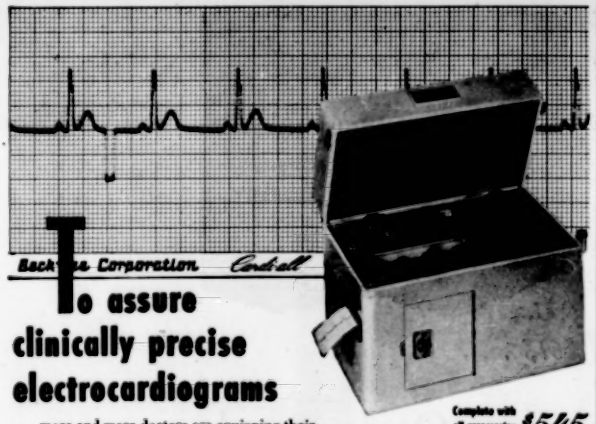

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The *Cardi-all* not only provides the physician with heart records of high fidelity and precision but also is so simple to operate, so easy to carry, so free from maintenance cares, so amazingly low in price!

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Automatic Control—Specially designed circuits virtually eliminate any stylus wandering due to line voltage variations. An adequately stable iso-electric line for diagnostic purposes is provided by the *Cardi-all*. AC interference done away with by automatic self-grounding circuits plus electronic separation of interfering voltages.

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(Continued from page 60)

PHYSICIANS — WITH APPROPRIATE SPECIALIZATION for the following positions with Connecticut State Health Department: local health consultant, $6160-$10,880; epidemiologist, industrial hygiene physician, $7320-$9480; crippled children physician, clinical psychiatrist, $6540-$8340; appointments above minimum based on qualifications; United States citizenship required. Write: Glendon A. Scoboria, State Personnel Director, Room 405, State Office Building, Hartford, Connecticut. C

FELLOW—ANATOMIC, LEGAL, CLINICAL, EXPERIMENTAL pathology; not a residency; remuneration depends on qualifications, future on services. Send curriculum with 1st letter to: P. O. B. 228, Dover, Delaware. C

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TWO PHYSICIANS REQUIRED—FOR MEDICAL DEPARTMENT of progressive ethical pharmaceutical house in New York City; for position of medical correspondent and coordinator of clinical investigation, respectively; pharmaceutical experience desirable but not essential; applicants of either sex will be considered; salary commensurate with experience; candidates are requested to furnish full data regarding age, experience, draft status, etc.; replies will be held strictly confidential. Box 6149 C, % AMA.

WANTED—GENERAL PRACTITIONER; 70 BED GENeral hospital with clinic; house provided; no outside calls; submit full information; salary open. Box 6127 C, % AMA.

WANTED—ASSOCIATE; A WELL-TRAINED PHYSIcian; to take over large general practice; in well-equipped office in city of 260,000; some obstetrics, but mostly office and diagnostic work; will introduce; no money needed. Inquire: P. O. Box 743, Akron 9, Ohio. C

EAR, NOSE AND THROAT—BOARD CERTIFIED OR eligible; for newly established group practice in Colorado; salary; partnership available within year; can develop and head department. Box 5717 C, % AMA.

WANTED—A RESIDENT PHYSICIAN; TOWN OF 500 population and excellent farming territory; close to good hospitals; active Lions club will give backing; good Rx drug store. Contact: C. F. Murphy, President, Lions Club, Mt. Hope, Kansas. C

UPPER PENINSULA OF MICHIGAN—OPENING FOR medical health officer; 2 county district, with main office in Iron Mountain; active MCH and tuberculosis control programs; applicant must be United States citizen; salary range $600-$1000 month plus travel and vacation allowance; good housing available. For details, write: Chief, Section of Local Health Services, Michigan Department of Health, Lansing, Michigan. C

PHYSICIAN AS RESIDENT — IMMEDIATELY; TUberculosis and chest hospital; modern diagnosis and therapy; university affiliation; experience not necessary; $4500 to $5000 plus maintenance. Write: Rush Hospital, 5301 Lancaster Ave., Philadelphia, Pennsylvania. C

WANTED — WELL-TRAINED UROLOGIST; OPPORtunity for association leading to partnership with an established, board-eligible urologist with growing practice; include complete details with references in 1st letter; salary and percentage 1st year; middle west. Box 5813 C, % AMA.

CALIFORNIA MEDICAL BUREAU AGENCIES—FOR physician placements, and hospitals and medical properties for sale. 405 East Green St., Pasadena 1, California. C

The Medical Bureau

PALMOLIVE BUILDING CHICAGO

ADMINISTRATION: (A34) Direct educ. program, 300 bed hosp; half or full-time; E.

ANESTHESIOLOGY: (B47) Yng Diplo. to locate in univ. city; will be sponsored by surg. society, practice in teaching hosp; SW.

ASSISTANTS: (C65) By 2 gen'l surgeons & orthoped; 15 man group; coll. town; MW. (C66) By 2 GPs; long-estab'd; vic. Baltimore, (C67) By GP Board qualified OB-GYN desirous of eventually turning over gen'l pract. to ass't; partnership; univ. city; SW.

DERMATOLOGY: (D9) Ass'n with dermatologist, Dipl; univ. city, Pac. Coast; open now for part.

EENT: (E66) Oph. thoroughly trained & well-qual. eye surg; to head dept. important group; outstanding opportunity; staff of distinguished specialists. (E68) Oph; to head dept, become partner, 10 man group or establish own pract; town, 20,000; growing area, 45,000; no oph; Pac. NW. (E69) Otol; ass't; Board man; overworked; early partner; Fla. (E67) Oto. qual. do radical surgery, bronchoscopy, 32 man group; long-estab; coll. town, 100,000; MW.

GENERAL PRACTICE: (F25) Ass'n, GP; prof. one with 2-3 yrs. surg. training; town, 20,000, resort area, Mich. (F26) Group ass'n; univ. & resort city; SW. (F27) Ass'n with surg. & internist, Diplomates; res. town, near univ. city; So.; partnership; would like small town. (F28) Ass'n, small group; Los Angeles area; excellent hosp & teaching connections; partnership. (F29) Ass'n, 13 man group; sal. plus %; Texas. (F30) interesting oppor. for GP, lge indus. co; duties; directing health program, groups of employes; MW.

INDUSTRIAL MEDICINE: (G1) To take charge, medical service, plant, 1000 man; completely equipped dept; GP or internist eligible; Penn. (G2) Ass't med. director; leading plant, one of major industrial companies; univ. city, South.

INTERNAL MEDICINE: (H86) Head dept, 7 man group; town 10,000 short distances from univ, 3 colleges; MW; $12,000. (H87) Group ass'n; full partner after 2 yrs; San Francisco area. (H88) Ass'n, group estab'd '45; res. town, 20,000 near lge city, univ. med. center; (H89) Dipl. E. staff; research hosp, affil. med. school; should have academic, research interests; oppor. clinical pract, prof. one qual. research in field of malignancy; E. (H90) Part time post, med. dept, lge indus. co; oppor. private pract; $10,000; Midwest.

OBSTETRICS-GYNECOLOGY: (J7) Ass'n, group estab'd '52; early partner; coll. town, Calif. (J8) Head dept, 4 man group; (2 internists, 2 obstets, 1 diplo), univ. town, SW; early partner. (J9) Head dept, 14 man group; coll. town, 45,000; MW.

NEUROSURGERY: (K31) Ass'n, busy priv. pract; univ. med. center; So.

ORTHOPEDICS: (L64) Head dept, 26 man group; univ. city, W. (L65) Head Dept, 16 man group; city having 2 med. schools; MW.

PATHOLOGY: (M80) Dir. dept, fairly lge gen'l hosp; expansion program; Calif. (M81) Dir. new dept, sal. gen'l hosp, 200 beds; town 100,000; MW; % with substantial guarantee. (M82) Dir., dept, one of leading hosps; NYC.

PEDIATRICS: (N49) Head, dept small group; town 50,000, Calif; min. $15,000 (N50) Ass't, Board qual; large pract; univ. city; $1000-$1200. (N51) Head dept, 5 man group; $1000 monthly, 1st 6 months, then full partnership; So. (N52) Ass't, small group; res. town, near med. center; sal, 2 yrs; full partner, W.

PSYCHIATRY & NEUROLOGY: (P43) Head dept, 17 man group; univ. city, So; oppor. full partnership. (P44) Ass't, 2 Board men; town, 70,000. MW; early partner. (P45) Psy. trained in psychotherapy, exp. with children; half time; Calif.

PHYSICAL MEDICINE: (R34) Head dept, new gen'l hosp, 325 beds; univ. center, MW.

RADIOLOGY: (S61) Rad. & assoc. rad; to take over dept, 26 man group, 200 bed hosp; oppor. developing lucrative practice; MW. (S62) Ass't, rad group, after 2d yr, full partner; min. guarantee, $25,000; lge city; So.

RESEARCH: (T41) MD, well-trained pharmacology; key asst; $15,000.

SURGERY: (U79) Gen'l surg, prof. qual, thoracic surg; serve as chief surg., new hosp. (U79) Gen'l or thoracic surg, esp. tumor surg; group ass'n; W; $14-$18,000.

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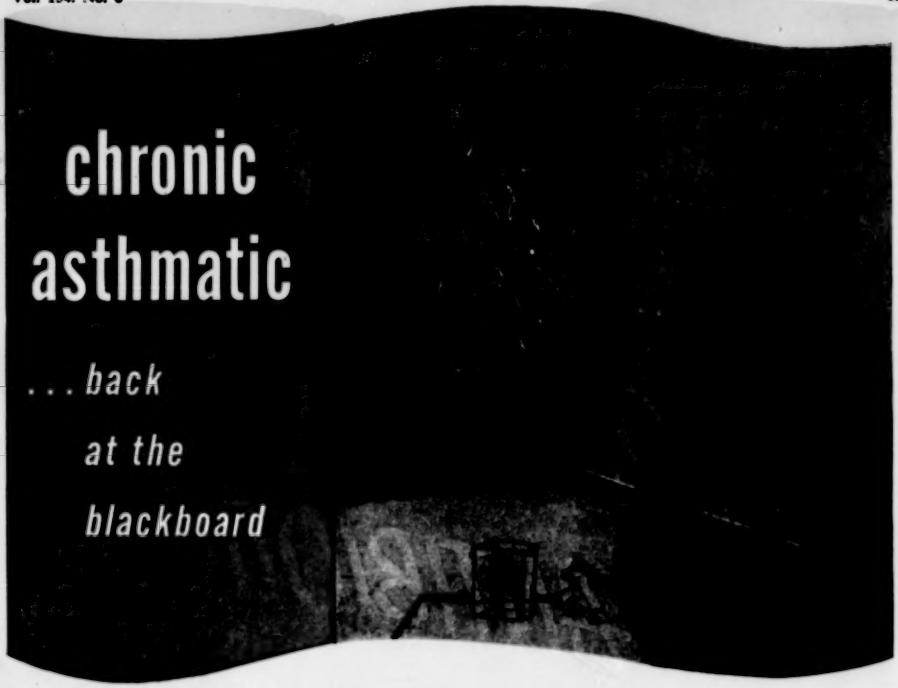
Burneice Larson

DIRECTOR

(Continued on page 66)

V 15 1954



MANY chronic asthmatics are being restored to normal activity by the potent bronchodilating action and unique convenience of NORISODRINE Sulfate powder.

When an attack threatens, the patiert merely takes three or four inhalations from the pocket-sized AEROHALOR, and the bronchospasm usually subsides promptly. He stays on the job; needs no injections or cumbersome equipment.

Clinical studies[1,2,3] show the effectiveness of NORISODRINE in mild and severe asthma. Toxicity is relatively low, and "fastness" to the drug is rarely encountered. With proper administration side effects are few and usually mild.

Before prescribing NORISODRINE, please write to Abbott Laboratories, North Chicago, Illinois, for literature explaining administration, dosage and precautions. NORISODRINE Sulfate powder 10% and 25% is supplied in multiple-dose cartridges. The AEROHALOR is prescribed separately. Won't you specify NORISODRINE for your next chronic asthmatic? Abbott

1. Kaufman, R., and Farmer, L. (1951), Norisodrine by Aerohalor in Asthma, Ann. Allergy, 9:89, Jan.-Feb. 2. Swartz, H. (1950), Norisodrine Sulphate (25 Per Cent) Dust Inhalation in Severe Asthma, Ann. Allergy, 8:488, July-August. 3. Krauss, L., Grossman, M., and Ivy, A. (1949), The Inhalation of 1-(3',4'-Dihydroxyphenyl)-2-Isopropylaminoethanol (Norisodrine Sulfate Dust), J. Allergy, 20:111, March.

1-248

Norisodrine®
Sulfate Powder
(ISOPROPYLARTERENOL SULFATE, ABBOTT)
In sifter cartridges for use with the AEROHALOR®, Abbott's powder inhaler

A NEW
BROAD-SPECTRUM
ANTIBIOTIC

V 15
1954

ACHRO

More Rapid Absorption

Increased Toleration

Greater Stability

ACHROMYCIN, a new broad-spectrum antibiotic developed by the Lederle research team, has demonstrated notable effectiveness in clinical trials with the advantages of more rapid absorption, quicker diffusion in tissue and body fluids, and increased stability resulting in prolonged high blood levels.

ACHROMYCIN exhibits a broad range of activity against beta hemolytic streptococcic infections, *E. coli* infections (including urinary tract infections, peritonitis, abscesses), meningococcic, staphylococcic, pneumococcic and gonococcic infections, otitis media and mastoiditis, acute bronchitis and bronchiolitis, and certain mixed infections.

ACHROMYCIN is now available in 250 mg., 100 mg., and 50 mg. capsules, SPERSOIDS® Dispersible Powder 50 mg. per teaspoonful (3.0 Gm.), Intravenous 500 mg., 250 mg. and 100 mg. Other dose forms will become available as rapidly as research permits.

Lederle

LEDERLE LABORATORIES DIVISION

AMERICAN Cyanamid COMPANY

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MYCIN

Hydrochloride Tetracycline HCl Lederle

(Continued from page 62)

MEDICAL OFFICERS—FOR GLENN DALE HOSPITAL,+ the tuberculosis hospital for the District of Columbia; salary range from $7040 to $8040 per annum; sick leave, annual leave, and retirement benefits; 1 year's experience in pulmonary diseases and eligibility to secure District of Columbia license required. Address inquiries to: Superintendent, Glenn Dale Hospital, Glenn Dale, Maryland. C

GENERAL PRACTITIONER WANTED—AS REPLACEment while doctor is in service; practice is in a small town in southeast Missouri, near St. Louis; needed by April 1st. Box 6165 C, % AMA.

WANTED — PHYSICIAN OR PSYCHIATRIST; 1500 bed mental hospital; family maintenance in addition to base salary. Write: W. B. Brown, MD, Superintendent, Mental Health Institute, Mt. Pleasant, Iowa. C

MEDICAL PLACEMENT
15 Peachtree Place, N. W.
Atlanta, Georgia
We serve the South.
Write us for information about openings.
(Mrs. Stewart R. Roberts, Director)

DERMATOLOGIST — BOARD CERTIFIED OR ELIGible; preferably young, with military service finished; to join 2 man partnership with active practice; Mid-West. Box 6143 C, % AMA.

WANTED—GENERAL PRACTITIONER WHO WOULD like light practice in mountain region; good fishing and hunting. For more details, write to: Lawrence Meyer, Forks of Saimon, California. C

WANTED—GOOD MAN CAPABLE OF ROUTINE SURgical procedures; to become partner in new, small general practice hospital and clinic. Box 6081 C, % AMA.

110 BED GENERAL HOSPITAL—NEEDS TWO HOUSE officers immediately; graduates of American schools, well-recommended; California licensed; $600 a month, 2 weeks vacation a year. St. Francis Hospital, Santa Barbara, California. C

WANTED—ASSISTANT PHYSICIANS; SALARY $5160-$6600; large eastern state mental hospital +; approved; excellent teaching program; training for Boards. Box 6096 C, % AMA.

FELLOWSHIP IN POST GRADUATE TRAINING — available immediately; opportunity to study clinical applications of anticoagulants; stipend $3000 per year. Apply: Dr. Walter D. Wise, Chief of Surgery, Mercy Hospital,*+ Baltimore, Maryland. C

WANTED—A PHYSICIAN; GENERAL PRACTICE; TO join long-established 8 man group, central California; give training, when available 1st letter; good salary, soon participating net income. Box 6160 C, % AMA.

CLINICAL DIRECTOR — IN LARGE PRIVATE MENtal hospital + admitting 450 yearly; approved by ACS and by AMA for 1 year psychiatric residency; must be diplomatic; send full information with 1st letter. Box 6057 C, % AMA.

HOUSE STAFF POSITIONS OPEN—100 BED, MODern, progressive, general voluntary hospital; surgery and obstetrics are particularly active; maintenance plus $250 monthly. Adelphi Hospital, 59 Greene Avenue, Brooklyn 38, New York. C

WANTED — INTERNIST; BOARD CERTIFIED OR qualified; to associate with established northern Minnesota clinic; good hospital facilities; fine schools and churches; guarantee with partnership offered; excellent opportunity. Box 6080 C, % AMA.

WANTED — GENERAL PRACTITIONER; NOT OVER 40; to join clinic in busy northern Minnesota city; modern group with new hospital; excellent churches and schools; partnership offered after 1st year; housing available. Box 6070 C, % AMA.

HOUSE OFFICER—100 BED GENERAL HOSPITAL; city of 400,000 population, near medical center; $350 per month including meals, uniforms and laundry; graduate grade A medical school; opening April 1st. Inquire: Administrator, South Highlands Infirmary, 1117 S. 12th St., Birmingham 5, Alabama. C

ORTHOPEDIC SURGEON — GROUP CLINIC, ALAbama; $8400-$12,000 leading to partnership. New York Medical Exchange, 489 Fifth Avenue, New York City. Patricia Edgerly, Director. C

WANTED — NEUROLOGIST; SAN FRANCISCO BAY area; well-qualified; by established group representing all specialties; financial arrangements open. Pacific Coast Medical Bureau, Agency, 703 Market, San Francisco 3. C

PHYSICIAN—FOR ADMINISTRATIVE CLINICAL INvestigation; pharmaceutical house; New York City; $12,000. New York Medical Exchange, 489 Fifth Avenue, New York City. Patricia Edgerly, Director. C

ANESTHESIOLOGIST—SAN FRANCISCO BAY AREA; preferably certified; join group of Diplomates this specialty, with offices in large approved hospital; salary 6 months, then regular member. Pacific Coast Medical Bureau, Agency, 703 Market, San Francisco 3. C

PHYSICIAN WITH WRITING ABILITY—FULL TIME; pharmaceutical company, New York City; $10,000-$12,000. New York Medical Exchange, 489 Fifth Avenue, New York City. Patricia Edgerly, Director. C

INTERNISTS—BOARD OR BOARD ELIGIBLE; SEVeral well-established, highly-rated southern California groups are expanding and will make attractive offers. Business and Medical Registry, 610 South Broadway, Los Angeles, California. C

When Chronic Fatigue, Insomnia are due to Low Blood Sugar Level...

Prescribing a simple change in diet may often restore energy and zest for living in many patients.

THE pace of modern living... business pressures, strenuous social activities, hurried meals, improper diet ... all too frequently lead to exhaustion, loss of energy, inability to sleep. Now clinical studies show that these clinical manifestations are often associated with hyperinsulinism—causing a lowered *blood sugar level.**

Portis reported these fatigue states were aggravated when the patients consumed beverages and foods that contained free sugar. He further stated that while these raise the blood sugar level momentarily, their "free" sugar is burned up too quickly, and a greater letdown follows. On the basis of this evidence a diet high in proteins and relatively high in carbohydrates in a complex form was given to his patients. He found such foods as milk are especially beneficial because they are digested more slowly, and because they maintained the blood sugar level for a longer period.

For these reasons milk with Postum is suggested as a between-meal feeding and bedtime drink. It can often be of practical benefit to the patient. The milk provides nourishment that is slowly, steadily converted to blood sugar. Postum offers a pleasant and palatable flavor. Postum offsets the distaste for hot milk.

Moreover, Postum in the milk drink has a psychological advantage because many patients resent the taking of milk in itself as a regression to their childhood patterns. Postum has been recommended by doctors for over 40 years. It is widely known to your patients as a caffein-free drink—a beverage that has helped countless caffein-susceptibles to break the coffee and tea habit.

We will be glad to secure for you a reprint of Dr. Portis' article. We will also send you without charge a supply of Postum for your patients if you send in the coupon below.

*Portis, Sidney A., Life Situations, Emotions and Hyperinsulinism, J.A.M.A. 142: 1281-1286 (April 22) 1950.

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Specialists in Selection

INTERNS AND RESIDENTS WANTED

*The * signifies a hospital approved for internships and the + approved for residencies by the Council on Medical Education and Hospitals of the A. M. A. Consult Council's approved list for types of internships and residencies approved.*

MEDICAL RESIDENCY—18 OPEN AT ST. FRANCIS Hospital and Sanatorium for Cardiac Children,+ Roslyn, Long Island, New York; July 1, 1954; minimum 1 year; service concerns itself with all phases of cardiovascular diseases in children and young adults; qualifications, well-trained pediatrician or internist; salary adequate; opportunity for research and teaching. Apply: Rev. Mother Superior, F.M.M., Superintendent, St. Francis Hospital and Sanatorium for Cardiac Children, Roslyn, Long Island, New York. D

STRAIGHT INTERNSHIPS IN SURGERY—AVAILable July 1, 1954; on Washington University surgical unit, St. Louis City Hospital *+; letter from Dean of your medical school necessary to complete application. Write: Dr. Alan McAfee, Washington University Unit Surgery, St. Louis City Hospital, St. Louis, Missouri. D

ANESTHESIOLOGY RESIDENCIES—SAN FRANCISCO (County) Hospital *+; affiliation through Stanford and University of California hospitals; immediate appointments. Address: Charles C. Wycoff, MD, Chief of Anesthesia, San Francisco Hospital, 22nd Street & Potrero Avenue, San Francisco, California. D

WANTED—PEDIATRIC RESIDENT; FOR JULY 1, 1954; 1 year; Chicago hospital *+; excellent service; excellent staff outpatient department. Box 6179 D, % AMA.

RESIDENCY, PSYCHIATRIC—NEW YORK; PRIVATE hospital + devoted to intensive analytically oriented psychotherapy; 2 years previous experience preferred; near training centers; opportunity for advancement and develop private practice; minimum $4200; start January 1 and July 1, 1954. Write: Director, High Point Hospital, Port Chester, New York. D

SURGICAL RESIDENCY—BOARD APPROVED; THE position of 3 year senior resident of our regular 3 year surgery residency, approved by American Board of Surgery is available July 1, 1954. Northwestern Hospital,*+ 810 East 27th Street, Minneapolis 7, Minnesota. D

(Continued on page 68)

For efficient antibacterial therapy of

INFECTED WOUNDS:

FURACIN

BRAND OF NITROFURAZONE N.N.R.

A bactericide nontoxic to human tissues:

FURACIN SOLUBLE DRESSING

FURACIN SOLUTION

1

2

A 45 year old woman complained of a painful swelling next to the anus, of one week's duration. This was incised, drained of pus and packed with gauze. Cultures showed E. coli and M. pyogenes albus.

Systemic antibacterial therapy and daily sitz baths were instituted. There was profuse wound drainage with fever for 4 days postoperatively (Fig. 1). Systemic antibacterial therapy was then replaced by local Furacin therapy t.i.d. Five days later the wound was clean and healing rapidly. The patient was discharged for ambulatory care (Fig. 2).

Complete healing occurred without further incident.

Some advantages of Furacin:

- wide antibacterial spectrum
- designed for external use only
- negligible toxicity for human tissues

Formula: Furacin preparations contain Furacin® 0.2% in water-miscible vehicles which dissolve in exudates.

Literature on request

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You may look like a man from Mars, Doctor . . .

but you'll see exactly what you're doing

WELCH ALLYN *Full Beam* HEADLIGHT

U.S. Patent No. 2,651,301

BINOCULAR VISION THROUGH THE BEAM OF LIGHT

Normal depth perception is retained and visible shadows in the instrumentation area are eliminated. Can be swung instantly to forehead height for oblique lighting.

GREATER INTENSITY AND EVENNESS OF ILLUMINATION

450 foot candles for illuminating deepest body cavities, yet glare and specular reflection are completely absent.

DURABLE, PRACTICAL, ECONOMICAL

Nothing to break or get out of adjustment. The bulb is a standard 1000 hour automobile taillight lamp. Complete with transformer for 110-120 volt, 60 cycle, AC current.

No. 450 Headlight with transformer.....$36.00

WELCH ALLYN, INC., SKANEATELES FALLS, NEW YORK

DESIGNERS AND MANUFACTURERS OF DIAGNOSTIC INSTRUMENTS FOR 39 YEARS

(Continued from page 66)

RESIDENCIES IN PSYCHIATRY—NEW; EXPANSION into a new $1,000,000 psychiatric wing of the Memorial Hospital *+ of the University of North Carolina; 72 inpatients; complete OPD; research facilities makes several 1st year residency positions available July 1, 1954; to 3 year approved program; beginning salary $3060; all forms of treatment including psychoanalysis. For further information contact: Dr. George C. Ham, Department of Psychiatry, University of North Carolina Medical School. D

WANTED—INTERN; FOR JULY 1, 1954 APPOINTMENT in general city hospital *+; 275 beds; large outpatient department; annual salary $1435 plus maintenance, room, uniforms, laundry; 2 room apartment for married doctor available; fully approved by the AMA and ACS. Box 6174 D, % AMA.

APPROVED PSYCHIATRY RESIDENCY—ANALYST director; 65 bed hospital +; OPD, adult and child; 12 Diplomate teachers; medical school * + basic affiliation; Mid-West; 5 residents; salary $4800-$6000; send biographic facts. Box 6202 D, % AMA.

GENERAL PRACTICE RESIDENCY — AVAILABLE July 1, 1954; 1 year approved program in Ohio hospital *+; $250 month plus complete maintenance. Box 6181 D, % AMA.

AVAILABLE — RESIDENCY IN GASTROENTEROLOGY; 1 year service in large Philadelphia hospital *+ with inpatient and outpatient instruction. Box 6197 D, % AMA.

RESIDENCY IN PATHOLOGY—APPROVED; FOUR years; beginning now or at time in July, 1954; large county hospital *+; American citizenship required; salary $2444; yearly increase $250; meals, room, laundry of uniforms free; supply details; training, military, references. Box 6176 D, % AMA.

MIXED RESIDENCY OPEN NOW— HOSPITAL ACS approved; 35 miles Philadelphia; excellent training for general practice; salary $300 living in, plus extras usually amounting to additional $100 monthly. Contact: Pottstown Hospital, Pottstown, Pennsylvania immediately. D

INTERNSHIPS—FIVE; AVAILABLE JULY 1, 1954; fully-approved rotating internships; member Exchange Visitors Program; 150 bed general hospital.*+ Apply The Administrator, Mary Immaculate Hospital, Newport News, Virginia. D

PATHOLOGY RESIDENCIES—INDIANA UNIVERSITY Medical School and affiliated hospitals *+; program for certification in pathologic anatomy and/or clinical pathology; opportunities for independent investigation; $2000 1st year. Indianapolis, Indiana. D

APPROVED RESIDENCIES IN PHYSICAL MEDICINE; at the Denver Veterans Administration Hospital +. Apply: Dean's Committee, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 20, Colorado. D

GENERAL PRACTICE RESIDENCY—ONE OPENING immediately and 1 on July 1st. $250 plus maintenance. Baptist Hospital, Pensacola, Florida. D

ASSISTANT RESIDENT—SERVICE INCLUDES active medical school program in both undergraduate and postgraduate work; affiliated with department of legal medicine; 475 hospital autopsies, 300 medico-legal autopsies, and 8500 surgicals; fully approved in all phases of Pathology. Write: Professor of Pathology, Box 617, Medical College of Virginia,*+ Richmond 19, Virginia. D

RESIDENCIES—MEDICAL CHEST DISEASES; GRADuates of approved medical schools; appointments now open on approved 260 bed service in hospital with complete medical and surgical facilities for treatment of tuberculosis and other chest diseases; active teaching program and encouragement of research; salary $300 with maintenance for couple, or $400 without maintenance; eligibility for California license essential. Address inquiries to: A. Goldman, MD, Chief, Professional Services, City of Hope Medical Center,+ Duarte, California. D

SECOND AND THIRD YEAR SURGICAL RESIdency; in 200 bed general hospital *+ affiliated with the University of Michigan; includes 8 months study of the basic sciences at the university; salary $300 monthly, plus quarters if unmarried, uniform laundry, and Blue Cross hospitalization. Write: Pontiac General Hospital, Pontiac, Michigan. D

PATHOLOGY RESIDENT WANTED—400 BED GENeral hospital *+; active medical school affiliation; 302 autopsies, 5360 surgicals; about 170,000 clinical tests in 1953; salary, 1st year resident $225 plus maintenance. Apply: Richard G. McManus, MD, Director, Institute of Pathology, West Penn Hospital, Pittsburgh 24, Pennsylvania. D

RESIDENTS — INTERNAL MEDICINE; BEGINNING July 1, 1954; new Veterans Administration Hospital, St. Louis, Missouri; affiliated with St. Louis University and Washington University Medical Schools. Apply: Samuel Bukantz, MD, Secretary, Dean's Committee, 660 South Kingshighway, St. Louis 10, Missouri. D

PATHOLOGY RESIDENCY — 224 BED HOSPITAL*+ in Pacific Northwest; 4 year approval and offering well-rounded experience in anatomical and clinical pathology; active teaching program; good financial arrangement depending upon background; available immediately. Box 6140 D, % AMA.

THREE YEAR SURGICAL RESIDENCY—APPROVED by American Board of Surgery; available July 1, 1954; 1 year surgical residency to fulfill requirements by allied specialty boards, available January 1, and July 1, 1954. Northwestern Hospital,*+ 810 East 27th Street, Minneapolis 7, Minnesota. D

VACANCY—AVAILABLE JULY 1, 1954; RESIDENCY in pathology; graduate of approved medical school; university affiliation and appointment; Board approved for 1-3 years. Apply: Director of Medical Education, New Britain General Hospital,*+ New Britain, Connecticut. D

ONE FIRST ASSISTANT AND ONE SECOND ASsistant resident; in OB-GYN; starting July 1, 1954; in 222 bed fully approved general hospital.*+ Apply: Director, House Staff Training, Lutheran Hospital of Maryland, 730 Ashburton St., Baltimore 16, Maryland. D

VACANCY — QUALIFIED MEDICAL RESIDENCY; Detroit metropolitan area. Apply: Director, Highland Park General Hospital,*+ 309 Glendale Ave., Highland Park 3, Michigan. D

PATHOLOGY RESIDENTS—TWO; JULY 1, 1954; $3300 1st year, $3800 thereafter; 200 necropsies, 4000 surgicals yearly; full time associate pathologist. H. E. Rabson, M.D., St. Joseph Hospital,*+ Fort Wayne 2, Indiana. D

INTERNSHIP AND RESIDENCY—ROTATING; EMphasis on general practice; daily lectures, conferences; outpatient clinic; internship approved; interns $1800; residents $2500; plus full maintenance. Peninsula Hospital,* 6150 Oakland Ave., St. Louis, Missouri. D

OBSTETRIC AND GYNECOLOGY RESIDENCY — 3 year appointment available July 1, 1954; monthly stipend begins at $325; general hospital,*+ 300 beds. Write to: Superintendent, Hurley Hospital, Flint, Michigan. D

OTOLARYNGOLOGY RESIDENCY—TEACHING HOSpital *+; 2 or 3 year appointment; service including broncho-esophagology, rhinoplasty and endonasal surgery; AMA residency approved; Long Island College Hospital, 340 Henry Street, Brooklyn, New York. D

RESIDENT PHYSICIAN — FOR FIRST YEAR APproved residency in pediatrics; commencing July 1, 1954; at 720 bed general hospital *+; salary $325 per month with meals. Contact: Administrator, San Joaquin General Hospital. Box 1899, Stockton, California. D

APPROVED RESIDENCY IN MEDICINE — EXCELlent service; $250 to $400 per month, dependent on previous training; Biochemical Hematology and early residency in surgery also open as of March 1, 1954. Box 6154 D, % AMA.

VACANCY JULY 1, 1954—FOR RESIDENCY IN ALlergy; Medical College of Virginia Hospital,*+ Richmond, Virginia; complete maintenance and stipend commensurate with training and in line with comparable institutions; residency AMA approved. D

OPENING JULY 1ST FOR SURGICAL RESIDENT IN mid-west clinic; on preceptorship basis; full credit toward Boards; salary $500 per month; outline of your experience and personal history in letter. Box 6133 D, % AMA.

APPROVED RESIDENCIES—ONE OR TWO YEARS; in general practice, obstetrics-gynecology, radiology, plastic surgery, anesthesiology and pathology; 320 bed general hospital *+; weekly clinical, pathological and radiological conferences; obstetrical-gynecological clinic; broad general training under the supervision of qualified specialists; qualifications: graduate of approved medical school and eligible for California licensure. Saint Francis Memorial Hospital, 900 Hyde Street, San Francisco, California. D

(Continued on page 70)

V 15
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The Bright Side

by E. K. H.

Irving Hoffman, the intrepid columnist now on his third round-the-world-trip, writes about the two reporters who were sent to a small town to cover a convention. They discovered that every hotel room was taken. The hotel manager, however, sympathetically trying to find a solution, suggested that the newsmen sleep across the road in an abandoned church.

At two a.m. the church bell pealed furiously. Alarmed, the hotel manager sent the porter to see what was up. The lad came back. "What was wrong?" asked the hotel manager.

"Not a thing, sir. The parties in pew eleven want two Scotch and sodas."

❖

Max Gordon, the theatrical producer, is noted for his efforts to get free advice. No matter whom he meets—he has a question to ask. At a recent party he was introduced to a "Dr. Smith."

"It's a funny thing, Doc," Gordon observed. "Some people say I have a flutter in my heart, and others say I haven't. If you could just listen for a moment . . . ."

"Hey," interrupted a guest, "Dr. Smith isn't a physician—he's a professor of Economics!"

"Is that so?" exclaimed Gordon, completely unperturbed. "Well, then, tell me, Doc, do you think American Car and Foundry is a good buy?"

❖

There was a young girl from St. Paul,
Wore a newspaper dress to a ball,
The dress caught on fire
And burned her entire
Front page, sporting section and all.

❖

Arthur H. James, one-time Governor of Pennsylvania, happened to get on a train that was transferring some inmates of an insane asylum to a farm where they were to recuperate. He inadvertently got in the same car. The conductor went through the train checking up on the group and counting them. "One, two, three, four, five . . . ." He stopped at the seat of the well-dressed man. "Who are you?" he asked.

"I am the Governor of Pennsylvania."

"Six, seven, eight . . . ."

We have just been told of an earnest young editor who, running a bit short of "filler" material, dreamed up an exercise "to test your stomach muscles." He printed this formula in detail, with the admonition: "Keep this up and let us know the results." The first letter received consisted of a single word: "Hernia."

❖

A great actor, noted for his wide-flung amours, was playing an out-of-town engagement when a boy called on him in his dressing room. The lad introduced himself and said, "I'm your son."

This was no new claim to the actor. He peered intently at the youth for a few seconds. "So you are—so you are," he said, and turning to his valet, "Give the boy a pass."

—Leo Guild

❖

It's Keenan Wynn's story: An out-of-towner was telling his friend about his experiences in the Big City the night before. "An amazing thing happened to me last night," he began. "I parked my car on Broadway and as I got out a tall blonde came up to me, asked me to follow her, took me to her apartment, pressed a hundred dollar bill in my hand, and asked me to spend the night. Naturally, I refused and . . . ."

"That *is* amazing," interrupted his friend. "How did you ever find a parking spot on Broadway on a Saturday night?"

❖

Convivial doings are reported in the Gloucester, Massachusetts Times: A happy gathering of nineteen members of the Community League met yesterday in their rooms, and with busy fingers and friendly intercourse passed the rainy afternoon very pleasantly.

Fulchock

"I Warned You, Daughter, Against Chester and His High-Pressure Production Methods."

(Continued from page 68)

RESIDENTS—MEDICAL AND SURGICAL; HAVE TWO available openings on both services; approved by Council on Medical Education and Hospitals AMA and ACS; 135 bed modern general hospital * + including professional building accommodating 28 specialists in the various fields of medicine and surgery; situated in nice section of Detroit; salary $250 monthly, including laundry; apartments available. Willis J. Gray, Director Jennings Memorial Hospital, 7815 E. Jefferson Ave., Detroit 14, Michigan. D

WANTED—RESIDENT IN PATHOLOGY; FOR CHILDREN'S hospital + ; should have had at least 1 year approved residency in pathology; medical center and teaching hospital; stipend $3600; July or September, 1954. Apply: Dr. George H. Fetterman, Department of Pathology, Children's Hospital of Pittsburgh, Pittsburgh 13, Pennsylvania. D

WANTED — RESIDENT PHYSICIANS; FOR ACcredited 220 bed central Pennsylvania hospital; salary open. Apply: Administrator, Lewistown Hospital, Lewistown, Pennsylvania. D

RESIDENT IN GENERAL PRACTICE—HOSPITAL + of 133 beds; approved by American Medical Association for resident training. Write: Kingston Hospital, Kingston, New York. D

APPROVED RESIDENCY IN PATHOLOGIC ANATOMY —available January 1, 1954. Northwestern Hospital * + 810 East 27th Street, Minneapolis 7, Minnesota. D

ANESTHESIOLOGY—APPROVED TWO YEAR RESIdency; complete training program; 340 bed teaching hospital expanding to 400 beds; 1 appointment available immediately, and 1 for July 1, 1954; stipend and full maintenance. Apply: Director, Mount Sinai Hospital, 2750 W. 15th Place, Chicago 8, Illinois. D

MICHAEL REESE HOSPITAL * + — APPLICATIONS are now being considered for residency appointments in urology, pathology and X-ray; fully approved programs; 800 bed general hospital with outstanding training and research programs; stipend and full maintenance provided. Apply: Medical Director, Michael Reese Hospital, Chicago 16, Illinois. D

APPROVED TWO YEAR RESIDENCY IN OBSTETrics-gynecology; clinic cases referred to residents under supervision of qualified specialists; qualifications: must be graduate of approved medical school and be eligible for California licensure. Saint Francis Memorial Hospital, * + 900 Hyde Street, San Francisco, California. D

WANTED—RESIDENTS IN PSYCHIATRY; APPROVED residencies available; large eastern mental hospital + ; excellent teaching program including postgraduate university courses; training in modern therapeutic procedures; salary, $4400 per annum. Box 6897 D, % AMA.

INTERNSHIP—ROTATING; AMA APPROVED; AVAILable July 1, 1954; 240 bed general hospital * + ; salary $200 plus quarters, meals, uniforms and laundry; graduates of AMA approved schools only. St. Luke's, Jacksonville, Florida. D

GENERAL PRACTICE ROTATING RESIDENCY — outstanding fully approved program, available July 1st; $385; write for full details and application. Administrator, Tulare County General Hospital, Tulare, California. D

ASSISTANT RADIOLOGIST—VOLUNTARY GENERAL hospital, expanding to 320 beds; 50% outpatients; must have both Boards; remuneration on percentage. Write: Rupert A. Hazill, MD, Radiologist, Trumbull Memorial Hospital, Warren, Ohio. D

WANTED—RESIDENTS: BEGINNING JULY 1, 1954; 235 bed general hospital * ; for all services; also general service in preparation for general practice; salary $200 per month plus complete maintenance. Evangelical Deaconess Hospital, 4229 Pearl Road, Cleveland 9, Ohio. D

RESIDENTS IN PSYCHIATRY—THREE YEAR APproved residencies with organized didactic curriculum and well-balanced clinical assignments, at VA Hospital, + State Hospital, + Menninger Hospital + and Outpatient Clinic, all located in Topeka; and affiliated with Topeka Institute for Psychoanalysis. Write: Menninger School of Psychiatry, Topeka, Kansas. D

RESIDENCIES IN MEDICINE—AVAILABLE JULY 1, 1954; approved by AMA; general hospital * + ; 175 beds, 30 bassinets; teaching program; regular clinical pathological conferences and seminars; stipend of $2100 per year plus maintenance. Deaconess Hospital, Clifton Avenue and Straight Street, Cincinnati 29, Ohio. D

ST. LOUIS, MISSOURI—HOSPITAL* OFFERS $250 monthly plus maintenance for interns or general resident; excellent training for general practice. Box 6117 D, % AMA.

APPROVED ORTHOPEDIC RESIDENCY — JANUARY or July, 1954. Bowman Gray School of Medicine.* + Winston-Salem, North Carolina. D

WANTED—JULY 1, 1954; INTERNS; IN A FULLY accredited 305 bed general hospital * + with rotating services; full Board approval for residencies in medicine, surgery, obstetrics-gynecology, radiology, anesthesiology and general practice with university affiliation; liberal stipend plus maintenance. Write: Administrator, Mercy Hospital, Canton, Ohio. D

RESIDENCY — INTERNAL MEDICINE, FLORIDA: AMA and Board approved; beginning July 1, 1954; 50 bed general hospital + ; large outpatient department. Riverside Hospital, Jacksonville, Florida. D

INTERNSHIPS AND RESIDENCIES — AVAILABLE July 1, 1954; in medicine, obstetrics and gynecology, surgery and general practice; AMA, AOA, and ACS approved 265 bed general hospital.* + Apply: The Administrator, Riverside Hospital, Newport News, Virginia. D

PATHOLOGY RESIDENCIES—UNIVERSITY OF KANsas Medical School * + ; new expanded facilities; 4 year program for certification, 1 year program for residents other specialties; 16 full time staff pathologists; 10,000 surgicals, 800 autopsies, clinical pathology, research; $1500 to $3300. Kansas City, Kansas. D

APPROVED RESIDENCIES AVAILABLE—AT GLENN Dale Hospital, + the tuberculosis hospital of the District of Columbia; salary $3400 per annum; sick leave and annual leave benefits; 1 year's internship required. Address inquiries to: Superintendent, Glenn Dale Hospital, Glenn Dale, Maryland. D

WANTED—INTERNS: BEGINNING JULY 1, 1954; 235 bed general hospital * AMA and ACS approved; rotating service; all services very active; salary $100 per month plus complete maintenance. Evangelical Deaconess Hospital, 4229 Pearl Road, Cleveland 9, Ohio. D

ASSISTANT RESIDENT IN MEDICINE—$200 PER month, plus full maintenance; applicants must have had 1 year of American Internship. Apply: Maryland General Hospital.* + Linden Avenue and Madison Street, Baltimore 1, Maryland. D

WANTED — RESIDENTS IN SURGERY, MEDICINE and obstetrics; at 231 bed general hospital * + ; to begin July, 1954; salary $250 per month. Write to: Chairman, Intern and Resident Committee, St. Alexis Hospital, Cleveland 27, Ohio. D

RESIDENCIES IN PSYCHIATRY — LARGEST NONprofit private mental hospital + in United States offers new 1 year approved training; graduates of approved schools and internships; yearly admissions 450; salary, $3600; reasonable rent in community or low cost maintenance possible; Boston and New York accessible. Apply: J. Butler Tompkins, MD, Brattleboro, Vermont. D

ANESTHESIOLOGY RESIDENCIES—AT UNIVERSITY of Minnesota Hospitals, Minneapolis Veterans Administration Hospitals and associated hospitals; an opening every 4 weeks. Address: Ralph T. Knight, MD, Director of Anesthesiology, University of Minnesota Hospital, Minneapolis, Minnesota. D

WANTED — RESIDENTS IN PSYCHIATRY; APproved 2 year residencies at a Pennsylvania State Hospital + with balanced clinical and didactic program including post graduate university course; family maintenance. Box 5800 D, % AMA.

WANTED — RESIDENT SURGEON, $200; INTERN, $130. July 1, 1954; full maintenance; approved 3 years surgery; 1 year internship. Kanawha Valley Hospital.* + Charleston 1, West Virginia. D

RESIDENCIES WANTED

PSYCHIATRIC RESIDENCY OR POSITION — FEmale; middle age; very ambitious; approved foreign school graduate, fluent English; citizenship; approved internship and 2 years psychiatric training; available immediately; references. Box 6208, % AMA.

(Continued on page 72)

V 15
1954

Zenith has a new star!

Overwhelming Response Greets Zenith's 3-Transistor Hearing Aid

Just last fall Zenith announced its new tubeless, 3-transistor "Royal-T". In the short period of time since then, the "Royal-T" has become America's *greatly-wanted* hearing aid!

Despite enormous production and shipments to dealers, we're unable to keep up with the tremendous demand. Production is being stepped up still more, but orders for this remarkable new instrument continue to pour in at an unprecedented rate.

Temporarily, Zenith dealers have had to set up waiting lists and are filling orders in the sequence received. If one or more of your hard-of-hearing patients is awaiting a "Royal-T", you can be assured that everything is being done to speed delivery.

Your patients can get a demonstration of the famous "Royal-T" from any Zenith Hearing Aid dealer (he's listed in the classified telephone directory). They'll get full details about its amazing economy. Just imagine, it operates for 15¢ a month compared to $4.50 to $9.00 for old-type vacuum-tube aids! No "B" battery, no tubes! They'll learn firsthand about its greater clarity, greater convenience. They'll be told about Zenith's famous 10-Day Money-Back Guarantee, 1-Year Written Parts Warranty and 5-Year Service Plan.

And remember, Zenith's "Royal-T" sells for only $125—remarkably low for a 3-transistor hearing aid! (Bone Conduction Accessory at moderate extra cost.) Zenith's $75 vacuum-tube models are still available.

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5801 Dickens Avenue, Chicago 39, Illinois

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STREET ADDRESS _____

CITY _____ ZONE ____ STATE _____

From the desk of
R. A. SUTTER, M. D.

(*Continued from page 70*)

LOCUM TENENS WANTED

RADIOLOGIST—LOCUM TENENS: BOARD CERTIFIED or eligible; New Jersey license; 300 bed general hospital *; temporary associateship full time basis from May 1, 1954 until November, 1955; salary open; present radiologist being recalled by Armed Forces; possibility of permanent association following return; send full credentials. Box 6180 G, % AMA.

WANTED—LOCUM TENENS; FOR TEMPORARY ASsociation with pediatricians in Mid-West. Box 6189 G, % AMA.

LOCUM TENENS—TEXAS; ON GULF OF MEXICO; lucrative salary plus liberal percentage; March 15th to June 15th; clinic and small general hospital; general practice and surgery. Box 6042 G, % AMA.

LOCUM TENENS WORK WANTED

AVAILABLE MARCH 29-APRIL 12—EXPERIENCED general practice, now resident urology mid-west hospital; licensed several states; also National Boards. Box 6204 H, % AMA.

SITUATIONS WANTED

PEDIATRICIAN — CERTIFIED; FAAP; VETERAN; married; family; private practice and teaching experience, completing year pediatric research in Europe; desires association with certified pediatrician; location open; available July. Box 6211 I, % AMA.

ANESTHESIOLOGIST — 43; FELLOW ELIGIBLE; licensed New York; internship, 2 years residency anesthesiology large hospital; wants association group, individual, head department, fee for service; available March, 1954. Box 6188 I, % AMA.

GENERAL PRACTITIONER — 32; FAMILY; THREE years solo general practice; interested in full time industrial, public health, school health program or other opportunity affording more regular time off; priority 4V. Box 6221 I, % AMA.

WANTED—OPHTHALMOLOGIST; BOARD CERTIFIED or Board eligible; to be associated with 2 other ophthalmologists in a large mid-west group; the position is open now and is a salaried one with opportunity of buying an interest in the clinic after 2 years. Box 6172 I, % AMA.

GENERAL PRACTITIONER—29; SINGLE; HARVARD medical graduate; military exempt; licensed Kentucky and Pennsylvania; rotating internship; wants position with established practitioner or group on salaried basis. Box 6207 I, % AMA.

RADIOLOGIST — YOUNG; SELECTIVE SERVICE classification 1V; with family; completing residency in large teaching hospital in Philadelphia; seeks permanent position in California beginning about June, 1954. Box 6192 I, % AMA.

INTERNIST—35; MARRIED; TWO CHILDREN; DIPlomate; category 4; 4 years of practice; medical school faculty; teaching and research experience; seeks group or private practice position in southern California; licensed. Box 6213 I, % AMA.

INTERNIST—32; BOARD ELIGIBLE; FAMILY; FIVE years training university hospitals; desires location to establish practice limited to internal medicine; preferably Pacific North-West, South-West, California. Box 6220 I, % AMA.

RADIOLOGIST—31; BOARD CERTIFIED; FAMILY; category 1V; well-trained; over 2 years experience in private practice; licensed in Louisiana and Massachusetts; seeking location with opportunity. Box 6217 I, % AMA.

RADIOLOGIST — DIPLOMATE; YOUNG; MARRIED; trained large medical center; category 1V; 3 years private practice; desire association with radiologist, group or half time hospital appointment. Box 6215 I, % AMA.

INTERNIST—GE; 31; CATEGORY 1V; BOARD ELIgible; 2 years resident internal medicine, 1 yr. g-4; 2 yrs. research; Ph.D.; desires association with group or internist with academic facilities. Box 6212 I, % AMA.

INTERNIST — 31; BOARD ELIGIBLE; INTERESTED in association or group, East or far West; licensed in New York and California; experience in general practice. Box 6184 I, % AMA.

INTERNIST — BOARD ELIGIBLE; 30; LEAVING Army; married; desires position, association with group or individual; East preferred; will consider other sections; available March, 1954. Box 6214 I, % AMA.

PATHOLOGIST — CERTIFIED PATHOLOGIC ANATomy; eligible clinical pathology; university trained; military service completed; family; California license; desires position in California. Box 6216 I, % AMA.

OPHTHALMOLOGIST — CERTIFIED 1949; AGE 34; family; recalled to Navy; to be discharged July; looking for private practice or group in West; successful practice prior to recall. Box 6219 I, % AMA.

COOK COUNTY INTERN INTERESTED IN GENERAL practice; desires association with group or another GP in college community; available July, 1954. Box 6190 I, % AMA.

OBSTETRICIAN-GYNECOLOGIST—32; COMPLETING 3 year approved residency in teaching center, June, 1954; desires association with obstetrician-gynecologist Diplomate or group. Box 6193 I, % AMA.

ANESTHESIOLOGIST—BOARD ELIGIBLE; SERVICE commitments fulfilled; desires position in southern Atlantic or eastern states; private fee preferable; 5 years experience. Box 6209 I, % AMA.

WANTED — BY COMPETENT OPHTHALMOLOGIST with extensive surgical experience; south-east location with hospital privileges; certified by Board and FACS. Box 6195 I, % AMA.

INTERNIST — 30; FAMILY; COMPLETING THREE years residency university affiliated hospital July 1st; category 1V; desires group or association; California. Box 6218 I, % AMA.

ANESTHESIOLOGIST—32; BOARD ELIGIBLE; STAFF of medical school; university medical center training, all phases; licensed New York, Illinois, Missouri, Pennsylvania, Texas; desires association group, individual or head department; fee for service. Box 6032 I, % AMA.

PATHOLOGIST — BOARD CERTIFIED; 29; ACTING chief of laboratory in 300 bed hospital affiliated with university medical center; desires position preferably within 100 mile radius New York City. Box 6092 I, % AMA.

ORTHOPEDIC SURGEON — 30; BOARD ELIGIBLE; married; experience includes duty as Air Force orthopedist; desires association with group or individual in West or Mid-West; available May. Box 6090 I, % AMA.

INTERNIST — GASTROENTEROLOGIST — 31; BOARD eligible; category 1V; family; trained large mid-western clinic-hospital; desires association Ohio or mid-west group or individual, July 1954. Box 6010 I, % AMA.

PEDIATRICIAN—CERTIFIED; 33; MARRIED; DEsires Florida position; clinical or other; while awaiting Florida state licensure examination; consider temporary or permanent location. Box 6113 I, % AMA.

GENERAL PRACTITIONER—AGE 36; COMPLETED training 1951; desires position in Latin-America with any private or governmental agency, pharmaceutical or hospital; available now. Box 6112 I, % AMA.

RADIOLOGIST — 34; BOARD ELIGIBLE; FAMILY; veteran; excellent training; diagnostic, therapy—supervoltage, Co-60 teletherapy, isotopes; seeking suitable association; licensed Oklahoma, New Jersey, Rhode Island; available May 1st. Box 6104 I, % AMA.

PATHOLOGIST—DIPLOMATE BOTH BOARDS; KENtucky license; age 43; experienced in teaching, research, cytology, blood banking, army, administration; desires permanent association in established private laboratory or hospital. Box 6129 I, % AMA.

DERMATOLOGIST—BOARD ELIGIBLE SEPTEMBER; now at eastern teaching center; 47; extensive experience internal medicine; desires location or association leading to partnership or purchase practice; licensed California, New York. Box 6146 I, % AMA.

GENERAL PRACTITIONER — 34; ONE YEAR APproved training in each of medicine and surgery; 2 years general practice; seeks purchase practice or association California; available July. Box 6124 I, % AMA.

OBSTETRICIAN-GYNECOLOGIST — 38; MARRIED; Board eligible; military service completed; 4 years residency large university medical center; desires association with individual or group with prospect of future partnership. Box 6167 I, % AMA.

RADIOLOGIST—DESIRES ASSOCIATION WITH HOSpital, radiologist or group; Diplomate; family. Box 6145 I, % AMA.

V 1
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WANTED—RESIDENCIES IN TUBERCULOSIS SANATORIUM or state hospital; or positions in general practice; by couple graduates, European school; several years of residencies in Europe; 1 year internship in USA. Box 6136 I, % AMA.

INTERNIST—40; BOARD ELIGIBLE; FAMILY; completing military service in July, 1954; licensed in Florida and California; prefer individual or group practice in these states. Box 6137 I, % AMA.

UROLOGIST — 33; FAMILY; BOARD QUALIFIED; university trained; expecting Army release, April 1954; desires association with established urologist or group in Midwest or West. Box 6170 I, % AMA.

PATHOLOGIST—30; BOARD CERTIFIED; FAMILY; leaving government service September 1954; desires location near large city; will consider hospital, group or associate position. Box 6159 I, % AMA.

PROCTOLOGIST—EXCELLENT TRAINING AND EXperience, Board qualified; seeks association private group practice; will consider purchase of practice; immediately available. Box 6138 I, % AMA.

ANESTHESIOLOGIST—COMPLETELY TRAINED AND Board eligible; desires hospital or group association; available April, 1954; fee for service only; all inquiries answered promptly. Box 6141 I, % AMA.

UROLOGIST—DIPLOMATE; 41; DESIRES PARTNERship or association; invest to $10,000; California or Hawaii. Box 6169 I, % AMA.

GENERAL SURGEON — DIPLOMATE AMERICAN Board; FACS; age 35; married; veteran; desires location in small or medium sized community for practice limited to general surgery. Box 5847 I, % AMA.

SURGEON—34; DIPLOMATE; WELL-QUALIFIED IN general and thoracic surgery; experience teaching anatomy, pathology, and surgery; desires position on a medical school or teaching hospital staff. Box 6082 I, % AMA.

OBSTETRICIAN-GYNECOLOGIST — 34; MARRIED; category IV; completing 3 year residency; available August; desires association with individual or group; East or West Coasts preferred. Box 6073 I, % AMA.

SURGEON—CERTIFIED; AGE 37; CAPABLE; EXtensive experience and dependable judgment; desires permanent association; licensed in several states; available in June. Box 6107 I, % AMA.

UROLOGIST—BOARD QUALIFIED; VETERAN; AGE 30; married; desires location, association, or clinic practice in California; interested in teaching association; have California licensure. Box 6102 I, % AMA.

OTOLARYNGOLOGIST—CERTIFIED; FACS; 34; FAMily; university trained; experienced deep neck, rhinoplasty, bronchoscopy; 4 years private practice; leaving Navy August; desires association, group, solo, or would invest. Box 6106 I, % AMA.

GENERAL SURGEON—AGE 40; SIX YEARS SURgical training; well-qualified; gyn, traumatic, chest, abdominal; willing to do some general work. Box 6104 I, % AMA.

OTOLARYNGOLOGIST—IMMEDIATELY AVAILABLE; certified, FICS; permanent basis; desires either private practice, group, or clinic; applicant cooperative, amiable, experienced plastic surgery, some ophthalmology, allergy; has California license; agencies cooperation invited. Box 5980 I, % AMA.

GENERAL SURGEON—34; VETERAN; BOARD ELIgible; family; 4 years successful general practice prior to training; associate with another surgeon; group; clinic; community 10-50,000 preferred; larger considered. Box 6084 I, % AMA.

SURGEON—36; MARRIED; BOARD QUALIFIED (SIX years training); teaching and research background; extensive practical experience (thoracic, abdominal, and subspecialties); draft exempt; immediately available; can co-invest; industrious. Box 6087 I, % AMA.

OPHTHALMOLOGIST—31; CERTIFIED 1951; FAMILY; leaving army July 1954; wide surgical experience; all own finest ophthalmic equipment; desires lifetime opportunity. Box 6050 I, % AMA.

PHARMACOLOGIST — MD, Ph.D.; AVAILABLE FOR part time consultation and/or medical writing; 10 years postgraduate experience includes both animal and clinical research. Box 6078 I, % AMA.

IMMEDIATELY AVAILABLE; WELL-QUALIFIED ASsistants and associates and Diplomates in the specialties, to head departments. Please write for recommendations of highly qualified candidates; negotiations strictly confidential. Founders of the Counseling Service to the Medical Profession. Our 57th year. Woodward Medical Bureau, 185 North Wabash, Chicago. I

THORACIC AND GENERAL SURGEON — BOARD qualified in both; trained, university hospitals; several years, surgeon, USAMC; 1 year, group surgeon; currently private practice, thoracic surgery; prefers group; early 30's. Woodward Medical Bureau, 185 North Wabash, Chicago. I

GENERAL SURGEON — WELL-TRAINED CARDIOvascular surgery; surgical training, teaching hospital; 4 years, association, practice of surgery with emphasis on cardiovascular surgery; Diplomate. Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago. I

NEUROSURGEON — 33; CLASS "A" GRADUATE; 2 years, residency, neurosurgery, Cleveland Clinic; 1 year, residency, neurosurgery, university hospital; 2 years private practice, neurosurgery; seeks group, preferably California, Florida. Woodward Medical Bureau, 185 North Wabash, Chicago. I

UROLOGIST — YEAR'S RESIDENCY IN GENERAL surgery and 3 year residency, urology, university hospital; now in military service, discharge soon. Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago. I

GENERAL SURGEON—31; CLASS "A" GRADUATE; 2 years, Captain, USAMC; 6 years, surgical training, university hospital; seeks group, association, assistantship; East; Southeast; Mideast. Woodward Medical Bureau, 185 North Wabash, Chicago. I

DERMATOLOGIST—30; BOARD CERTIFIED; FAMILY; category IV; available June, 1954; desires association with group or partnership. Box 6118 I, % AMA.

WHEN YOU NEED AN ASSISTANT OR ASSOCIATE, or American Board specialist to head a department, please write for recommendations of qualified candidates; negotiations strictly confidential. Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago. I

PROFESSIONAL AND TECHNICAL AIDES

WANTED — EXPERIENCED REGISTERED TECHnician; for general laboratory work in a modern well-equipped 200 bed hospital; salary $325; 44 hour week. Department of Pathology, Port Huron Hospital, Port Huron, Michigan. I.

WANTED—SEROLOGIST; Supervise dept, 4 tech.; leading pharm co.; degree basic sci.; 5 dn. wk.; exp. ser. biologicals, or research. (b) TECH INSTR; MW col.; teaching and lab. exp. preferred; excellent opprty. (c) HISTOLOGIST; univ. appointment; supervisory with teach. responsibility; 44 hr. wk. (d) CHIEF TECH; Establish lab.; 30 bd. gen col hosp; permnt. basis; W. (e) TECH; Routine lab.; $4800 per yr plus maint.; 100 bd. gen. col hosp; E. (f) TECH; Exp. blood chem. and ser.; interested milk bact count; small gen. hosp; $400 plus meals. (g) LAB AND X-RAY TECH; 3 man group; prefer reg; col. twn; W. (h) RESEARCH ASS'T; State univ; dept of biochem; free tuition in biochem dept.; 1 mo. vacation; E. (Please send for an analysis form so we may prepare an individual survey for you.) WOODWARD MEDICAL BUREAU, 185 North Wabash Ave., Chicago. I.

(Continued on next page)

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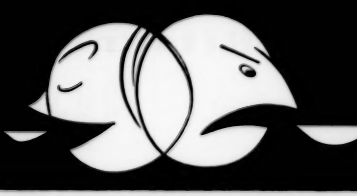

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1. Council on Pharmacy and Chemistry, A. M. A.: New and Nonofficial Remedies 1953, Philadelphia, J. B. Lippincott Company, 1952, p. 311.

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(Continued from preceding page)

EXPERIENCED PHYSIOTHERAPIST NEEDED — TO work with Division on Children's Diseases of the Niagara Research Institute. Any such person is to contact: Dr. Edward F. Connor, Spencer Hospital, Meadville, Pennsylvania. L

WANTED — (a) HEMATOLOGY, CHEM. & BACT. TECHS; children's hosp; med. center; MW. (b) BACT; qual. supervise routine lab, collaborate basic research; lge hosp; NYC. (c) TISSUE TECH; gen'l hosp; resort town; Florida. (d) BACT. & 3 GEN'L TECHS; new hosp; air-conditioned lab; year-round resort city; SW. (e) TWO BIOCHEMICAL TECHS; medical school research dept; emphasis on accuracy rather than volume; univ. center; So. (f) X-RAY & LAB. TECH; take charge lab. of several specialists; one of larger towns; Alaska. (g) HEAD TECH; B.S.; considerable exp. req; new 400 bed hosp; univ. town; MW; $400. (h) BLOOD BANK TECH; relatively new bank; new modern building, splendidly equipped; Calif. (i) X-RAY TECH; by Board specialist; nell. town, New England; $325. (Please send for an Analysis Form so we may prepare an individual Survey for you.) MEDICAL BUREAU, Burneice Larson, Director, Palmolive Building, Chicago. L

SCIENTISTS, TECHNOLOGISTS, X-RAY, PHYSICAL therapy and occupational therapists; opportunities in all parts of America and abroad. Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago. L

PRACTICES WANTED

WANTED — **ESTABLISHED OPHTHALMOLOGY OR EENT** practice; by Board Diplomate; well-trained; best references; will consider association; West preferred; California license; can interview on trip West, June. Box 6194 N, % AMA.

HOSPITALS AND SANATORIA FOR SALE

FOR SALE OR RENT—36 BED HOSPITAL *; COMplete for general surgery and OB; 12 rooms on 1st floor with complete facilities for group; 200 KV X-ray. Mrs. Mary Jackson, Box 4, Olney, Illinois. Chicago phone: Whitehall 3-1644. O

HOSPITAL WANTED

SURGEON — WISHES TO PURCHASE, LEASE, OR manage small hospital; experienced in hospital administration; will also consider partnership. Write: Box 7F, 524 East 20th Street, New York, New York.

PRACTICES FOR SALE

ARKANSAS — POPULATION 10,000; NINE ROOM office suite; completely equipped; 2 waiting, 2 consultation, 2 examining rooms; X-ray, laboratory completely equipped; low rent; excellent hospital facilities; open staff; owner specializing; will introduce; available June 1, 1954. Box 6120 P, % AMA.

CALIFORNIA — OPHTHALMOLOGY; LOS ANGELES vicinity; active practice; substantial income; excellent opportunity for competent man; equipment optional; moderate down payment; balance from income; will remain adequately to assist; licensure essential. Box 5990 P, % AMA.

CALIFORNIA—SAN FRANCISCO PENINSULA; VIRtually unopposed general practice in new subdivision attractive building; established 5 years; excellent equipment; X-ray, laboratory; new open staff hospital; $12,000; terms; introduce; specializing. Box 6161 P, % AMA.

KENTUCKY—INTERNAL MEDICINE; NEW FULLY equipped downtown office available for immediate occupancy; established practice to go with purchase of equipment; leaving very soon because of health. Box 6210 P, % AMA.

KENTUCKY — CENTRAL; UNOPPOSED SURGICAL practice with office in new hospital; minimum guarantee; housing available. Box 6177 P, % AMA.

ILLINOIS—GENERAL PRACTICE; SUDDEN DEATH of well-established only physician at Stanford, Illinois forces sale of clinical building, just completed; up to date fixtures and medical inventory; located only 15 miles from Bloomington, Illinois which has 3 approved hospitals; practice has been established, with fine showing as to receipts; present office assistant continues to be available. Hope Quay, Administrator, Stanford, Illinois. P

ILLINOIS—GENERAL PRACTICE; SOUTH; 2500 POPulation; excellent opportunity; must dispose account of health; price of equipment. Box 6144 P, % AMA.

INDIANA — SUBURBAN; GENERAL PRACTICE; grossed $56,000 last year; 4 day week; 40 miles from Chicago; town of 5000; man must be able to do less complicated surgical procedures; no real estate; pay entirely from proceeds; by July 1st. Box 6147 P, % AMA.

IOWA — NORTHEAST; MODERN HOME-OFFICE; equipment, drugs, diathermy, X-ray; good practice, 20 years; town 2000; all churches, schools; doctor recently deceased; small hospital; will stand close investigation. Box 6131 P, % AMA.

IOWA — EENT INDIVIDUAL PRACTICE; ESTABlished more than 30 years; in community of 200,000; health forces retirement; fair price for equipment, etc. Box 6046 P, % AMA.

MASSACHUSETTS — BOSTON; LARGE GENERAL practice; very active; well-established; available May 1st; leaving to specialize; will introduce; excellent opportunity. Box 6178 P, % AMA.

MICHIGAN — RADIOLOGY OFFICE; FULLY equipped in heart of large Midwest city; practice consists of private and hospital radiology; but above $3000 per month; can associate short period to insure continuity; terms open. Box 6160 P, % AMA.

MINNESOTA — MINNEAPOLIS; LARGE GENERAL practice; substantial income; excellent location; modern, air-conditioned, well-equipped offices; open hospital; short association desirable for introductions; reasonable; liberal terms; specializing. Box 6142 P, % AMA.

MISSOURI — TOWN 1300; GROWING RAPIDLY; fully-equipped office building with X-ray; up-to-date open hospital, 20 miles; practice $15,000 yearly, without major surgery; no significant competition; price $15,000; home optional; leaving for service; golden opportunity for someone. Box 6182 P, % AMA.

NEW JERSEY—LUCRATIVE GENERAL PRACTICE; established 17 years; excellent location; well-equipped offices (5 rooms) residence above (no real estate) low rental; very reasonable. Write Room 1108, 1315 Walnut Street, Philadelphia, Pennsylvania. P

NEW YORK—SOUTHERN TIER; GENERAL PRACtice; population 60,000; 2 hospitals; gross $20,000, 2 years after Navy; home and office; owner specializing. Box 6151 P, % AMA.

NEW YORK — WESTERN; POPULATION 10,000; general; no surgery or obstetrics needed; excellently equipped; X-ray, EKG, Basal, diathermy; open staff; gross 20,000 plus; owner specializing; reasonable; terms. Box 5982 P, % AMA.

OHIO—FULLY EQUIPPED OFFICE OF RECENTLY deceased physician; practice established 35 years; new hospital; town of 5000; office and residence combination; excellent opportunity; will lease or sell. Write: Mrs. Jane Sweeke, Rye Beach, Huron, Ohio. P

OHIO—SIX ROOM OFFICE; COMPLETELY EQUIPPED X-ray, surgery, laboratory, 2 bed therapy room; all equipment new; 7 room living quarters; new kitchen; bath up and down; 7 inlaid Venetian tile fireplaces; walnut woodwork, hardwood floors; county seat of 6000; 10 miles from atomic project; 60 miles from Columbus, Dayton, Cincinnati. Contact: Andrew M. Brenner, MD, Winchester, Indiana. P

OHIO—EXCLUSIVE INTERNAL MEDICAL OFFICE practice; 40 years; downtown Cleveland; complete diagnostic and therapeutic X-ray, laboratory; office equipment furnishing 6 rooms; sacrifice price $3500. G. L. Lambright, 1836 Euclid Ave., Cleveland, Ohio. P

OREGON — LEAVING FLOURISHING GENERAL practice for July residency; Oregon coast county seat; new hospital; selling equipment, supplies; fine office, reasonable rent; house available if more fast. Box 6196 P, % AMA.

PENNSYLVANIA—CENTRAL; BUSY GENERAL PRACtice in growing agricultural-industrial community; available with purchase home-office combination; new 5 room office suite, grosses $36,000; available in June; will introduce; hospital appointment available; leaving to specialize. Box 6080 P, % AMA.

(Continued on page 76)

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1954

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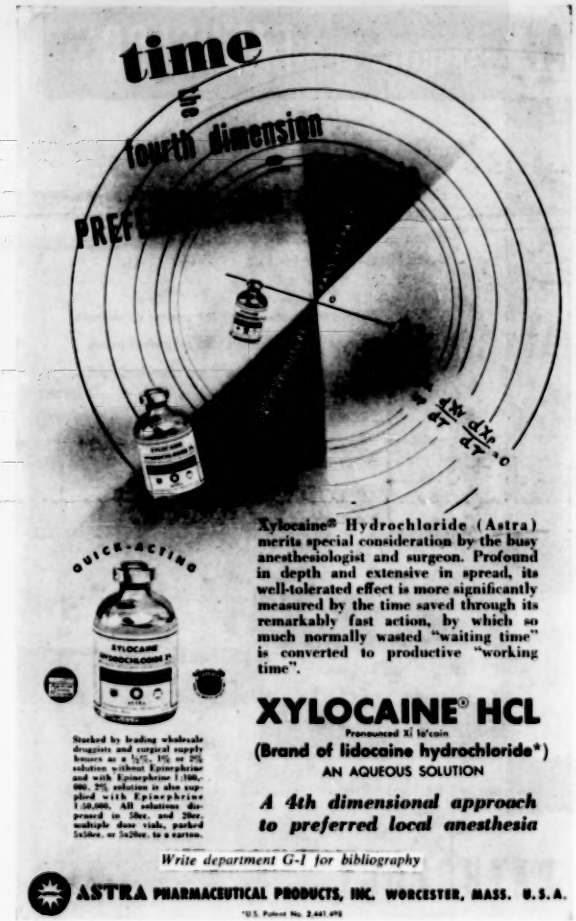

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(Continued on page 78)

BOOKS RECEIVED

Books received by THE JOURNAL *are acknowledged in this column. Selections will be made for more extensive review in the interests of* THE JOURNAL *readers as space permits. Books listed in this department are not available for lending or sale through the American Medical Association.*

Textbook of Physiology and Biochemistry. By George H. Bell, B.Sc., M.D., F.R.F.P.S.G., Professor of Physiology in University of St. Andrews at University College, Dundee, Scotland, J. Norman Davidson, M.D., D.Sc., F.R.F.P.S.G., Gardiner Professor of Physiological Chemistry in University of Glasgow, Glasgow, Scotland, and Harold Scarborough, M.B., Ph.D., F.R.C.P.E., Professor of Medicine in Welsh National School of Medicine of University of Wales, Cardiff. With foreword by Robert C. Garry, M.B., D.Sc., F.R.F.P.S.G., Regius Professor of Physiology in University of Glasgow. Second edition. Cloth. $10. Pp. 1002, with illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Place, Edinburgh 1, 1953.

Orthopädische Konstruktionen: Arbeiten aus der orthop. univ. Poliklinik München, dem Fürsorgeasyrett München, der orthop. univ. Klinik Leipzig, der orthop. Klinik Sanderbusch/Oldenburg, 1912-1953. Von Prof. Dr. Franz Schede. Neue Folge Heft 52, Arbeit und Gesundheit: Sozialmedizinische Schriftenreihe aus dem Gebiete des Bundesministeriums für Arbeit, herausgegeben von Professor Dr. phil. et med. M. Bauer und Dr. med. F. Paetzold, Ministerialräten im Bundesministerium für Arbeit. Boards. 8 marks. Pp. 98, with 141 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart-O; (American agent—Grune & Stratton, Inc., 381 Fourth Ave., New York 16), 1953.

Physiological Cardiology. By Arthur Ruskin, M.D., F.A.C.P., Associate Professor of Internal Medicine, University of Texas—Medical Branch, Galveston. Publication number 184, American Lecture Series, monograph in Bannerstone Division of American Lectures in Physiology. Edited by Robert F. Pitts, M.D., Ph.D., Professor of Physiology and Biophysics, Cornell University Medical College, New York. Cloth. $8. Pp. 370, with 9 illustrations. Charles C. Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1953.

The Size and Growth of Tissue Cells. By Joseph G. Hoffman, Ph.D., Director of Cancer Research, Roswell Park Memorial Institute, Buffalo, New York. Publication number 172, American Lecture Series, monograph in American Lectures in Medical Physics, edited by Otto Glasser, Ph.D., Department of Biophysics, Cleveland Clinic Foundation, Cleveland, Ohio. Cloth. $4. Pp. 102, with 13 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad Street, Oxford, England; Ryerson Press, 299 Queen Street, W., Toronto 2B, 1953.

How Many General Hospital Beds are Needed? A Reappraisal of Bed Needs in Relation to Population. By Louis S. Reed, Health Economist, Division of Hospital Facilities, and Helen Hollingsworth, Chief, Division of Research and Statistics, Office of Vocational Rehabilitation. United States Department of Health, Education, and Welfare, Public Health Service, Bureau of Medical Services. Public Health Service publication no. 309. Paper. 25 cents. Pp. 73, with 5 illustrations. Superintendent of Documents, Govern. Print. Off., Washington 25, D. C., 1953.

Sources of Morbidity Data. Listing Number 1, 1953, from the Clearinghouse on Current Morbidity Statistics Projects. Prepared by staff of Division of Public Health Methods, Public Health Service, with assistance of advisory committee from Working Group on General Illness Statistics of Public Health Conference on Records and Statistics. United States Department of Health, Education, and Welfare, Public Health Service. Public Health Service publication no. 332. Paper. Various pagination. Washington, D. C., 1953.

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(Books Received Continued)

Strahlenschutz und sonstiger Arbeitsschutz bei der medizinischen Anwendung von Röntgenstrahlen: Die neuesten Unfallverhütungsvorschriften mit Erläuterungen. Von Dr. Wilhelm Ernst, leitender technischer Aufsichtsbeamter und Röntgensachverständiger der Berufsgenossenschaft für Gesundheitsdienst und Wohlfahrtspflege, Hamburg. Boards. 7.80 marks. Pp. 97, with 22 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart-O; (American agent—Grune & Stratton, Inc., 381 Fourth Ave., New York 16), 1953.

Rehabilitation Centers in the United States. By Henry Redkey. Compilation of information submitted by 40 rehabilitation centers for first national conference on rehabilitation centers, December 1-3, 1952, under sponsorship of National Society for Crippled Children and Adults and Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare. Paper. $1. Pp. 128, with illustrations. National Society for Crippled Children and Adults, 11 S. LaSalle Street, Chicago 3, 1953.

Vitamins and Hormones: Advances in Research and Applications. Volume XI. Edited by Robert S. Harris, Professor of Biochemistry of Nutrition, Massachusetts Institute of Technology, Cambridge, G. F. Marrian, Professor of Medical Chemistry, University of Edinburgh, Edinburgh, Scotland, and Kenneth V. Thimann, Professor of Plant Physiology, Harvard University, Cambridge, Massachusetts. Cloth. $8.50. Pp. 356, with illustrations. Academic Press, Inc., 125 East 23rd Street, New York 10, 1953.

Advances in the Control of Zoonoses: Bovine Tuberculosis, Brucellosis, Leptospirosis, Q Fever, Rabies. WHO/FAO Seminar on Zoonoses, Vienna, November 1952. World Health Organization monograph series no. 19. Published jointly by FAO and WHO and issued also as FAO Agricultural Studies no. 25. Paper. $3; 15/-; 960 French francs; 12 Swiss francs. Pp. 275, with illustrations. Columbia University Press, 2960 Broadway, New York 27; World Health Organization, Palais des Nations, Geneva, 1953.

Nash's Surgical Physiology. By Joseph Nash, M.D. Second edition edited by Brian Blades, M.D., Professor of Surgery, George Washington University School of Medicine, Washington, D. C., with collaboration of Edward J. Beattie, Jr., et al. Cloth. $12.50. Pp. 686, with 35 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1953.

Official History of the Canadian Medical Services, 1939-1945. Volume 2: Clinical Subjects. Edited by W. R. Feasby, B.A., M.D., Lieutenant-Colonel, R.C.A.M.C., Supplementary Reserve Lecturer in Physiology, University of Toronto, Toronto. Published by authority of Minister of National Defence. Cloth. $5. Pp. 537, with illustrations by Canadian war artists and photographers. Edmond Cloutier, C.M.G., O.A., D.S.P., Queen's Printer and Controller of Stationery, Ottawa, 1953.

Distribution of Health Services in the Structure of State Government 1950. Part 3: Personal Health Services Provided by State Government. By Aaron W. Christensen, Evelyn Flook and Georgie B. Druzina. United States Department of Health, Education, and Welfare, Public Health Service, Bureau of State Services, Division of State Grants. Public Health Service publication no. 184, part 3. Paper. 65 cents. Pp. 277. Superintendent of Documents, Govern. Print. Off., Washington 25, D. C., 1953.

Diagnosis and Localization of Brain Tumors: A Clinical and Experimental Study Employing Fluorescent and Radioactive Tracer Methods. By George E. Moore, M.D., Ph.D., Director, Roswell Park Memorial Institute, Buffalo, New York. Cloth. $10.50. Pp. 221, with 67 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Illinois; Blackwell Scientific Publications, Ltd., 49 Broad Street, Oxford, England; Ryerson Press, 299 Queen Street, W., Toronto 2B, 1953.

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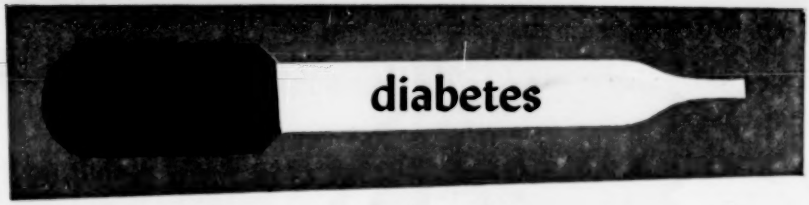

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1. Blotner, H., and Marble, A.: New England J. Med. *245*:567 (Oct. 11) 1951.
2. Steine, L.: GP *8*:45 (July) 1953.

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Abstracts on Military and Aviation Ophthalmology and Visual Sciences. Volumes I and II. By Conrad Berens, M.D., F.A.C.S., Professor of Clinical Ophthalmology, New York University, New York, and L. Benjamin Sheppard, M.D., Assistant Professor of Ophthalmology, Medical College of Virginia, Richmond. Cloth. $20 per volume. Pp. 539; 425. Biological Sciences Foundation, Ltd., Hillyard House, 1011 New Hampshire Avenue, N.W., Washington 7, D. C., 1953.

Funktionelle Atmungstherapie: Dynamik—Leistungsfähigkeit—Versagen des Atem-Stimm-Apparates—Bronchialasthma und Lungenemphysem. Von Dr. Med. Julius Parow, Leiter des Instituts für funktionelle Atmungstherapie der Krankenversicherungsanstalt Berlin (West). Boards. 12.90 marks. Pp. 126, with 29 illustrations. Georg Thieme, Diemershaldenstrasse 47 (14a) Stuttgart-O; (American agent—Grune & Stratton, Inc., 381 Fourth Ave., New York 16), 1953.

Vital Statistics of the United States, 1950. Volume II: Marriage, Divorce, Natality, Fetal Mortality and Infant Mortality Data. Volume III: Mortality Data. Prepared under supervision of Halbert L. Dunn, M.D., Chief, National Office of Vital Statistics. U. S. Department of Health, Education, and Welfare, Public Health Service. Cloth. $3.25; $4. Pp. 448; 607. Superintendent of Documents, Govern. Print. Office, Washington 25, D. C., 1953.

The Psychiatrist: His Training and Development. Report of 1952 Conference on Psychiatric Education held at Cornell University, Ithaca, New York, June 19-25, 1952. Organized and conducted by American Psychiatric Association and Association of American Medical Colleges. Editorial board: John C. Whitehorn, M.D., Chairman, et al. Cloth. Pp. 214. American Psychiatric Association, 1785 Massachusetts Ave., N.W., Washington 6, D. C., 1953.

Diabetic Care in Pictures: Simplified Statements with Illustrations Prepared for the Use of the Patient. By Helen Rosenthal, B.S., and Joseph Rosenthal, M.D., Physician-in-Charge, Diabetes Clinic, Boston Dispensary, Boston. Second edition. Boards. $3. Pp. 164, with 128 illustrations. J. B. Lippincott Company, 227-231 S. Sixth Street, Philadelphia 5; Aldine House, 10-13 Bedford Street, London, W.C.2; 2083 Guy Street, Montreal, 1953.

Handbook on Sanitation of Airlines. Standards of sanitation for construction and operation of commercial passenger aircraft and servicing and catering facilities. U. S. Department of Health, Education, and Welfare, Public Health Service, Division of Sanitation. Public Health Service publication no. 308. Paper. 20 cents. Pp. 31, with illustrations. Superintendent of Documents, Govern. Print. Office, Washington 25, D. C., 1953.

Atlas der systematischen Anatomie des Menschen. Band I: Systema scleti, luncturae ossium, systema musculorum. Von G. Wolf-Heidegger, Dr. med. et phil., o. Professor der Anatomie und Prosektor am anatomischen Institut der Universität Basel. Cloth. 32 Swiss francs. Pp. 218, with 347 illustrations. S. Karger, Holbeinstrasse 22, Basel; American agent—Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, 1954.

Metabolic and Toxic Diseases of the Nervous System: Proceedings of the Association, December 12 and 13, 1952, New York, N. Y. Research Publications, Association for Research in Nervous and Mental Disease, volume XXXII. Editors: H. Houston Merritt, M.D., and Clarence C. Hare, M.D. Cloth. $10. Pp. 604, with 104 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1953.

Techniques of Tuberculin Testing and BCG Vaccination. U. S. Department of Health, Education, and Welfare, Public Health Service, Division of Chronic Disease and Tuberculosis of Bureau of State Services. Public Health Service publication no. 182. Paper. 55 cents. Pp. 44, with 19 illustrations. Superintendent of Documents, Govern. Print. Off., Washington 25, D. C., 1953.

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Black's Medical Dictionary. By John D. Comrie, M.A., B.Sc., M.D., and William A. R. Thomson, M.D. Twenty-first edition. Cloth. $7. Pp. 1013, with 416 illustrations. The Macmillan Company, 60 Fifth Avenue, New York 11; A. & C. Black, Ltd., 4-6 Soho Sq., London, W.1, 1953.

Arzt und Neurose. Von Professor J. H. Schultz. Second edition of "Neurose, Lehensnot, ärztliche Pflicht." Boards. 8.40 marks. Pp. 107. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart-O; agents for U. S. A., Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1953.

Das Analzäpfchen in der Geschichte der Therapie. Von Prof. Dr. P. Diepgen. Boards. 4.20 marks. Pp. 44, with 3 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart-O; agents for U. S. A., Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, 1953.

Edinburgh Post-Graduate Lectures in Medicine. Volume Six. Cloth. 21/-. Pp. 508, with illustrations. Published for Honyman Gillespie Trust by Oliver & Boyd, Ltd., Tweeddale Court, 14 High St., Edinburgh 1; 98 Great Russell St., London, W. C. 1, 1953.

Medical Report on Atomic Bomb Effects. The Medical Section, The Special Committee for Investigation of Effects of Atomic Bomb, National Research Council of Japan. Cloth. $2.50. Pp. 118. Nankodo Company, Ltd., Haruki-cho, Bunkyo-ku, Tokyo, 1953.

Diseases of the Retina. By Herman Elwyn, M.D., Senior Assistant Surgeon, New York Eye and Ear Infirmary, New York. Second edition. Cloth. $12. Pp. 713, with 243 illustrations. Blakiston Company, Inc., 575 Madison Ave., New York 22, 1953.

The Winslow Weight Watcher: A Complete Course in Nutrition for Those Who Want to Lose Weight. By Thyra Samter Winslow. With foreword by Dr. Leonid Kotkin. Cloth. $3.50. Pp. 384. Abelard Press, Inc., 381 Fourth Ave., New York 16, 1953.

On Aphasia: A Critical Study. By Dr. Sigm. Freud, Privatdozent for Neuropathology in University of Vienna. [First published in German in 1891.] Cloth. $3. Pp. 105. International Universities Press, Inc., 227 W. 13th Street, New York 11, 1953.

Transactions of the Fifty-Seventh Annual Meeting of the American Laryngological, Rhinological and Otological Society, Inc., 1953. Cloth. Pp. 598, with illustrations. C. Stewart Nash, sec'y of society, 277 Alexander St., Rochester 7, New York, 1953.

Soins pré et post-opératoires (recueil de conférences). Par le Dr François Bolot, professeur agrégé du Val-de-Grâce. Préface du Dr H. Laborit. Paper. Pp. 359, with 46 illustrations. Librairie Le François, 91 boul. Saint-Germain, Paris, 6e, 1953.

United States Civil Defense: Civil Defense against Biological Warfare. Federal Civil Defense Administration (technical manual 11-10). Paper. 20 cents. Pp. 42. Superintendent of Documents, Govern. Print. Office, Washington 25, D. C., 1953.

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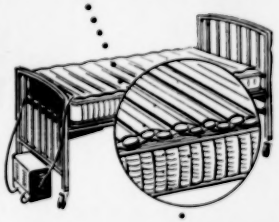

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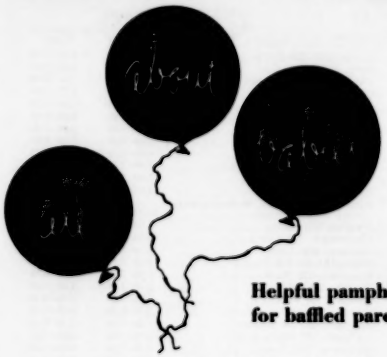

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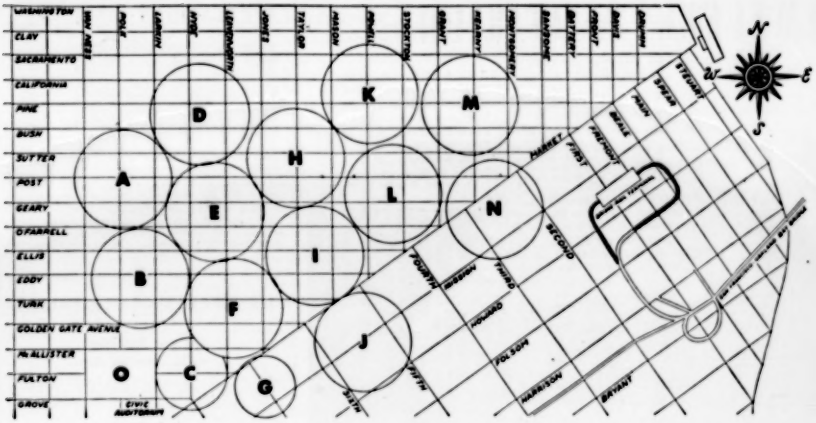

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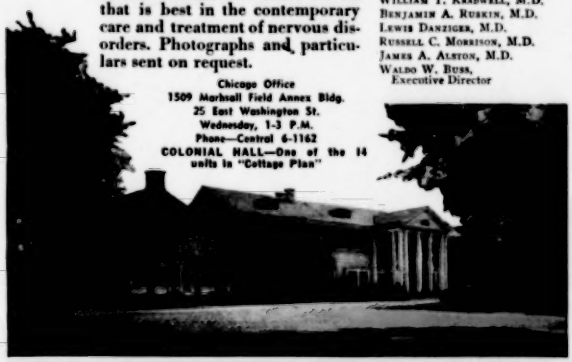
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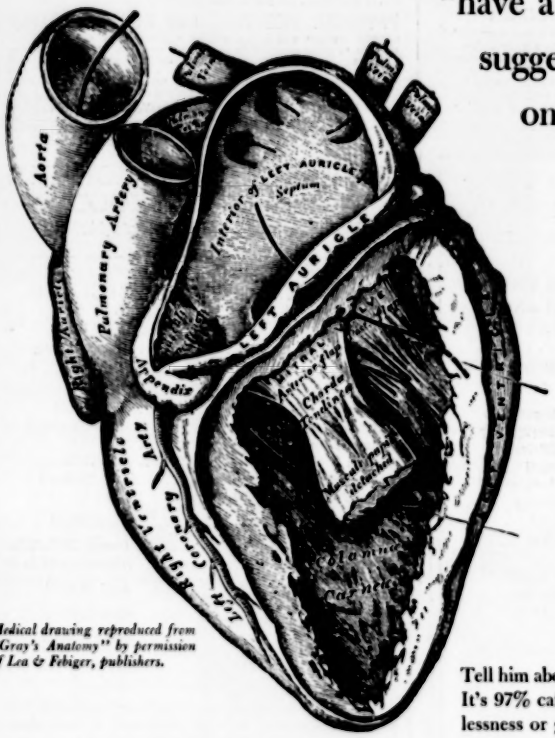

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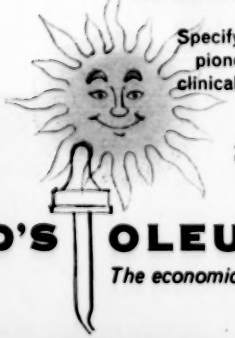

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